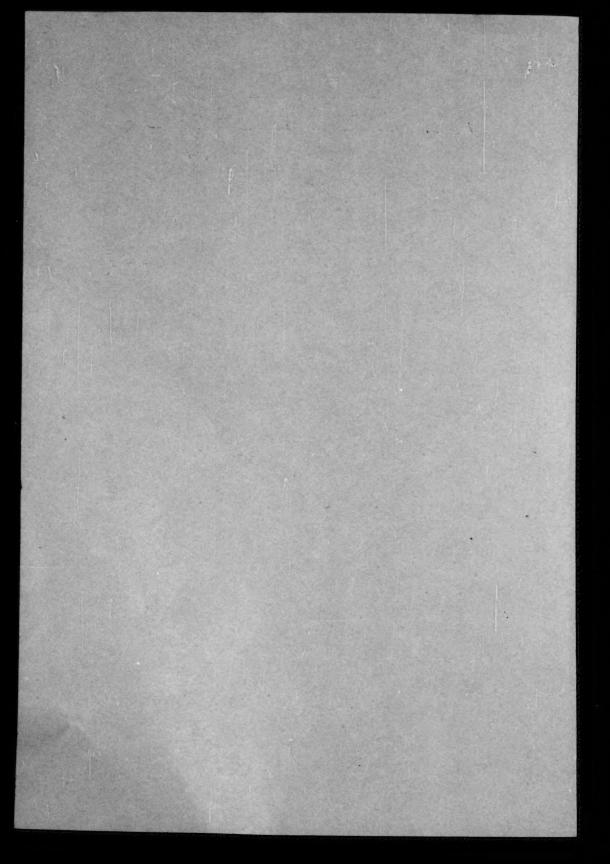
PUBLISHED BY

The Society for Analytical Chemistry

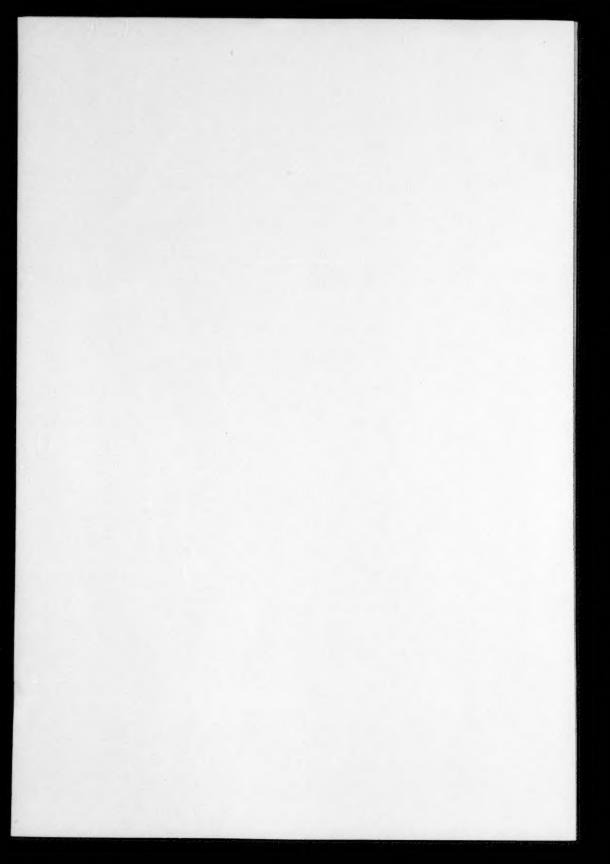
INDEX TO VOLUME 7



De Society for Applytical Chemistry

VIII. 7





PUBLISHED BY

The Society for Analytical Chemistry

A MONTHLY JOURNAL DEALING WITH ALL BRANCHES OF ANALYTICAL CHEMISTRY

VOL. 7

PUBLISHED FOR THE SOCIETY BY

W. HEFFER & SONS, LTD.

4, PETTY CURY, CAMBRIDGE, ENGLAND

ABSTRACTS

th minature

The Society for Analytical Chemistry

AND SUPPOSED OF AUCTORING

VOL. 7

and a cold a cold that the

EDITORIAL COMMITTEE

Chairman: B. A. ELLIS, O.B.E., M.A., F.R.I.C.

B. S. COOPER, B.Sc., F.Inst.P.

C. H. R. GENTRY, B.Sc., F.R.I.C.

C. A. JOHNSON, B.Pharm., B.Sc., F.P.S., F.R.I.C.

H. F. W. KIRKPATRICK, B.Sc., Ph.D., A.R.C.S., F.R.I.C.

B. J. WALBY, B.Sc., A.R.I.C.

W. A. WAYGOOD, M.Sc., A.R.C.S., F.R.I.C.

K. A. WILLIAMS, B.Sc., Ph.D., F.R.I.C. A.Inst.P.

AND THE PRESIDENT AND HONORARY OFFICERS

President of the Society

R. C. CHIRNSIDE, F.R.I.C.

Hon. Secretary of the Society R. E. STUCKEY, Ph.D., D.Sc., F.R.I.C., F.P.S.

Hon. Treasurer of the Society
A. J. AMOS, B.Sc., Ph.D., F.R.I.C.

Editor

NORMAN EVERS, B.Sc., Ph.D., F.R.I.C.

Assistant Editor
Mrs. H. I. FISK, B.Sc.

The following list contains the names of journals (and their abbreviations) from which papers have been abstracted regularly during the year. Journals that have been omitted are those that contain only an occasional analytical paper and a number of Russian journals from which translated abstracts have been published through the medium of Referativnyl Zhurnal, Khimiya, and Referativnyl Zhurnal, Khimiya, Biologicheskaya Khimiya.

Abbreviated Title	FULL TITLE
Acad. R.P.R., Baza Cercet: Stiint. Timi-	Academia Republicii Populare Romîne, Baza de Cercetări
şoara, Stud. Cercet. Ştiint., Ser. I	Științifice Timișoara, Studii și Cercetări Științifice, Seria I
Acad. R.P.R., Stud. Cercet. Chim	Academia Republicii Populare Romîne, Studii si Cercetări de
	Chimie
Acta Chem. Scand	Acta Chemica Scandinavica
Acta Chim. Acad. Sci. Hung	Acta Chimica Academia Scientiarum Hungaricae
Acta Chim. Sinica	Acta Chimica Sinica Peking
Acta Chim. Sinica	Acta Pharmaceutica Sinica
Acta Pharm. 10x., Kbh	Acta Pharmacologica et Toxicologica [København]
Acta Polon Pharm	Acta Poloniae Pharmaceutica
Amer I Clin Path	American Journal of Clinical Pathology
Anal Chem	Analytical Chemistry
Anal Chim. Acta	Analytica Chimica Acta
Analyst	Analyst
An. Asoc. Quím. Argentina	Anales de la Asociación Química Argentina
An. Bromatologia	Anales de Bromatologia [Madrid]
Angew. Chem	Angewandte Chemie
Ann. Chim., Roma	Annali di Chimica [Rome]
Ann. Falsif	Annales des Falsifications et de l'Expertise Chimique
Ann. Pharm. Franç.	Annales Pharmaceutiques Françaises
An. Real Soc. Esp. Fis. Quim., B	Acta Pharmaceutica Sinica Acta Pharmacologica et Toxicologica [København] Acta Physiologica Scandinavica Acta Poloniae Pharmaceutica American Journal of Clinical Pathology Analytical Chemistry Analytica Chimica Acta Analyst Anales de la Asociación Química Argentina Anales de Bromatologia [Madrid] Angewandte Chemie Annali di Chimica [Rome] Annali di Chimica [Rome] Annales des Falsifications et de l'Expertise Chimique Annales Pharmaceutiques Françaises Anales de la Real Sociedad Española de Física y Química, Serie B [Madrid]
An Stiint Ilnin "Al I Cura" Inci	Serie B [Madrid] Analele Științifice ale Universității "Al. I. Cuza" din Iași
	Antibiotics & Chemotherapy
Antibiot. & Chemother	
Arch. Biochem. Biophys	Archives of Biochemistry and Biophysics
Arch. Eisenhüttenw	Archiv für das Eisenhüttenwesen
Arch. Eisenhüttenw Arch. Pharm., Berlin	Archiv der Pharmazie und Berichte der deutschen pharma-
	zeutischen Gesellschaft
Ark. Kemi	Arkiv för Kemi [Stockholm]
Arzneimittel-Forsch	Arzneimittel-Forschung
Ark. Kemi Arzneimittel-Forsch Atomic Energy of Canada Ltd. Rep.	Atomic Energy of Canada Ltd. Reports
Atomnaya Energiya	Atomnaya Energiya [Moscow]
Atomnaya Energiya Aust. J. Appl. Sci. Aust. J. Exp. Biol. Med. Sci.	Australian Journal of Applied Science
Aust. J. Exp. Biol. Med. Sci	Australian Journal of Experimental Biology and Medical Science
B.C.I.R.A. Journal Ber. dtsch. kevam. Ges.	Science
B.C.I.R.A. Journal	B.C.I.R.A. Journal [British Cast Iron Research Association]
Ber. dtsch. keram. Ges	Berichte der deutschen keramischen Gesellschaft
Biochem. J	Biochemical Journal
Biochem. Z	Biochemische Zeitschrift
Biochim. Appl	Biochimica Applicata [Parma e Roma]
Biochim, Biophys, Acta	Biochimica et Biophysica Acta
Biochem. J. Biochem. Z. Biochim. Appl. Biochim. Biophys. Acta Biokhim.iya Biol. Inst. Roslin Leczniczych	Biokhimiya [Moscow] Biuletyn Instytutu Roślin Leczniczych [Poznan]
The state of the s	Bollettino dei Laboratori Chimici Provinciali [Bologna]
Boll. Lab. Chim. Provinciali Boll. Sci. Fac. Chim. Bologna	Bollettino Scientifico della Facoltà di Chimica Industriale,
	Università di Bologna
Boll. Soc. Ital. Biol. Sper	Bollettino della Societa Italiana di Biologia Sperimentale
Brauerei, Wiss. Beil	Brauerei, Wissenschaftliche Beilage
Brauwissenschaft	Brauwissenschaft
BrennstChemie	Brennstoff-Chemie
Brit. J. Appl. Phys	British Journal of Applied Physics
Brit. Med. J.	British Medical Journal
Boll. Soc. Ital. Biol. Sper. Brauerei, Wiss. Beil. Brauwissenschaft BrennstChemie Brit. J. Appl. Phys. Brit. Med. J. Bull. Agric. Chem. Soc. Japan Bull. A.S.T.M. Bull. Cent. Belge Etud. et Docum. Faux	Bulletin of the Agricultural Chemical Society of Japan
Bull. A.S.I.M.	Bulletin of the American Society for Testing Materials
Bull. Cent. Belge Étud. et Docum. Eaux	Bulletin du Centre Belge d'Étude et de Documentation des Eaux
Bull. Chem. Soc. Japan	Bulletin of the Chemical Society of Japan
Bull. Inst. Chem. Res., Kyoto Univ.	Bulletin of the Institute for Chemical Research, Kyoto
Zam. Then Onem. Acce, It job Onto.	University [Japan]
Bull. Inst. Nucl. Sci. "Boris Kidrich,"	Bulletin of the Institute of Nuclear Sciences "Boris Kidrich"
Relevade	[Belgrade]
	Bulletin of the Research Council of Israel

Abbreviated Title			FULL TITLE
			Bulletin de la Société Chimique Belgrade
Bull. Soc. Chim. Biol			Bulletin de la Société de Chimie Biologique
Bull. Soc. Chim. France			Bulletin de la Société Chimique de France
Canad. J. Biochem. Physiol.			Canadian Journal of Biochemistry and Physiology
Canad. J. Chem			Canadian Journal of Chemistry
Cas. Lék. Ces	**		Casopis Lékařů Ceských [Prague]
Cereal Chem	**		Cereal Chemistry
Ceskosl. Farm			Ceskoslovenská Farmacie Chemical Age
Chem. Age			Chemia Analityczna [Warsaw]
Chem. Ber			Chemische Berichte
Chemie, Prague			Chemie [Frague]
Chemie, Prague			Chemiker-Zeitung
Chem. & Ind.	* *		
Chemist Analyst Chem. Listy			Chemist-Analyst Chemické Listy [Prague]
Chem. Pharm. Bull., Japan			Chemical & Pharmaceutical Bulletin [Japan]
Chem. Průmysl			Chemický Průmysl [Prague]
Chem. Tech., Berlin			Chemische Technik [Berlin]
Chem. Weekbl			Chemisch Weekblad
Chem. Zvesti Chim. Anal	* *		Chemické Zvesti [Bratislava]
Chim. Anal	* *		Chimica e l'Industria [Milan]
Chim. e Ind Chimia		* *	Chimica e l'Industria [Milan] Chimia [Switzerland]
Clin. Chem			Clinical Chemistry [Baltimore, U.S.A.]
Clin. Chim. Acta			Clinica Chimica Acta
Coll. Czech. Chem. Commun.			Collection of Czechoslovak Chemical Communications
Compt. Rend			Comptes Rendus Hebdomadaires des Séances de l'Académi des Sciences
Contr. Boyce Thompson Inst.		• •	Contributions. Boyce Thompson Institute for Plant Research [New York]
Croat. Chem. Acta			Croatica Chemica Acta
Dansk Tidsskr. Farm			Dansk Tidsskrift for Farmaci
Diagn., Lab. e Clin.			Diagnosi, Laboratorio e Clinica [Naples]
Drug Standards			Drug Standards
Dtsch. ApothZtg Dtsch. LebensmittRdsch			Deutsche Apotheker-Zeitung Deutsche Lebensmittel-Rundschau
Zesten. Zeotensminatusem.		* *	APPRIORIES AND DESIGNATION AND APPRIORIES AND APPRI
Egypt. J. Chem			Egyptian Journal of Chemistry
Endocrin. & Metabolism			Endocrinology & Metabolism
Erdöl u. Kohle		**	Erdől und Kohle
Ernährungsforschung	* *	**	Ernährungsforschung
Experientia	* *	**	Experientia [Basle]
Farbe u. Lack	4.50		Farbe und Lack
Farmácia			Farmácia [Bratislava]
Faserforsch. u. Textiltech			Faserforschung und Textiltechnik
Fette, Seif., Anstrichmitt			Fette, Seifen, Anstrichmittel
Fiz. Sb. L'vovsk. Univ			Fizicheskii Sbornik, L'vovskii Gosudarstvennyi Universite imeni I. Franko
Food Sci., Mysore			Food Science [Mysore]
Fuel, London			Fuel [London]
and the same of th			CONTRACTOR OF THE PROPERTY OF
Geochim. et Cosmoch. Acta			Geochimica et Cosmochimica Acta [London]
Geokhimiya			Geokhimiya [Moscow]
Helm Chim Acts			Helyetica Chimica Acta
Helv. Chim. Acta	**		Helvetica Chimica Acta Hoppe-Seyler's Zeitschrift für Physiologische Chemie
Hoppe-Seyl. Z Hutn. Listy			Hutnické Listy [Prague]
			appropriate purply and the state of the State of
Ind. Aliment. Agric			Industries Alimentaires et Agricoles [Paris]
Ind. Chem	* *	* *	Industrial Chemist
Ind. Chim. Belge	4.5		Industrie Chimique Belge
Indian J. Dairy Sci			Indian Journal of Dairy Science Indian Journal of Pharmacy
Indian J. Pharm Inf. Quim. Anal			Indian Journal of Pharmacy Información de Química Analitica [Madrid]
Inst. Hierro y Acero			Instituto del Hierro y del Acero [Madrid]
Int. J. Appl. Radiation and Iso.	topes		International Journal of Applied Radiation and Isotopes
			International Sugar Journal Italian Journal of Biochemistry
Int. Sugar J	* *	- 5. 7.	The state of the s

Abbreviated ?	Title			Full Title
J. Agric. Chem. Soc. Japan	n	10		Journal of the Agricultural Chemical Society of Japan
J. Agric. Food Chem.				Journal of Agricultural and Food Chemistry [Washington, D.C.]
J. Amer. Chem. Soc.				Journal of the American Chemical Society
J. Amer. Leath. Chem. Ass				Journal of the American Leather Chemists' Association
J. Amer. Oil Chem. Soc.				Journal of the American Oil Chemists' Society
J. Amer. Pharm. Ass., Sci				Journal of the American Pharmaceutical Association, Scien-
,				tific Edition
J. Amer. Wat. Wks Ass.				Journal of the American Water Works Association
Iapan Analyst				Japan Analyst
J. Appl. Chem				Journal of Applied Chemistry [London]
J. Ass. Off. Agric. Chem.		* *		
J. Biol. Chem				Journal of Biological Chemistry
J. Chem. Educ. J. Chem. Soc.		* *		Journal of Chemical Education
J. Onom. Doo.				Journal of the Chemical Society [London]
J. Chem. Soc. Japan, Ind.	Chem.	Sect.		Journal of the Chemical Society of Japan, Industrial Chemistry
J. Chem. Soc. Japan, Pure	Chem.	Sect.		Section Journal of the Chemical Society of Japan, Pure Chemistry
A The second second				Section
J. Chinese Chem. Soc.				Journal of the Chinese Chemical Society [Taiwan]
				Journal of Chromatography
J. Clin. Endocrin. & Meta	bolism			Journal of Clinical Endocrinology & Metabolism
J. Clin. Path		* *		Journal of Clinical Pathology
J. Dairy Res		* *	* *	Journal of Dairy Research
J. Clin. Path. J. Dairy Res. J. Dairy Sci. J. Electroanal. Chem.	* *			Journal of Dairy Science
J. Electroanal. Chem.	**	* *		Journal of Electroanalytical Chemistry
J. Electrochem. Soc. Japan	ı	* *	* *	Journal of the Electrochemical Society of Japan
J. Endocrin		* *	**	
Jernkontor. Ann				Jernkontorets Annalen [Stockholm]
J. Forensic Sci				Journal of Forensic Science Journal of Histochemistry and Cytochemistry
J. Histochem. Cytochem. J. Indian Chem. Soc.				Journal of the Indian Chemical Society
J. Inorg. Nuclear Chem.				Journal of Inorganic & Nuclear Chemistry
I Inst Requing				Journal of the Institute of Brewing
J. Inst. Brewing J. Inst. Fuel J. Instn Chem., India				Journal of the Institute of Fuel
1. Instn Chem. India				Journal and Proceedings of the Institution of Chemists [India]
I. Inst. Petrol.				Journal of the Institute of Petroleum
I. Iron St. Inst.				Journal of the Iron and Steel Institute
J. Inst. Petrol. J. Iron St. Inst. J. Japan Inst. Metals, Sen	ıdai			Journal of the Japan Institute of Metals [Sendai]
1. Lab. Clin. Med				Journal of Laboratory and Clinical Medicine
J. Lab. Clin. Med J. Med. Lab. Technol. J. Metals, N.Y				Journal of Medical Laboratory Technology
J. Metals, N.Y				Journal of Metals [New York]
J. Neurochem				Journal of Neurochemistry
J. Neurochem. J. Oil Col. Chem. Ass. J. Opt. Soc. Amer.				Journal of the Oil and Colour Chemists' Association
J. Opt. Soc. Amer				Journal of the Optical Society of America
J. Org. Chem. J. Pharm. Pharmacol. J. Pharm. Soc. Japan J. Phys. Chem.	* *		* *	Journal of Organic Chemistry
J. Pharm. Pharmacol.				Journal of Pharmacy and Pharmacology
J. Pharm. Soc. Japan				Journal of the Pharmaceutical Society of Japan
J. Phys. Chem	* *	* *	* *	Journal of Physical Chemistry
I. Polarographic Soc.				Journal of Belaman Science
J. Polym. Sci		* *		Journal of Polymer Science
				Journal für praktische Chemie
J. Res. Nat. Bur. Stand.	**	* *		Journal of Research of the National Bureau of Standards
J. S. Afr. Chem. Inst. J. Sci. Food Agric.	* *	* *	* *	Journal of the South African Chemical Institute Journal of the Science of Food and Agriculture
J. Sci. Ind. Res., India, B	ior ()	* *		
J. Sev. Inc. Mes., India, D	(0, 0)			Journal of Scientific and Industrial Research [India], Sections B and C
J. Sci. Instrum				Journal of Scientific Instruments
1. Soc. Glass Tech.				Journal of the Society of Glass Technology
I. Soc. Leath. Tr. Chem.				Journal of the Society of Leather Trades' Chemists
"J. Stefan" Inst. Rep.				"J. Stefan" Institute Reports [Ljubljana]
J. Text. Inst				Journal of the Textile Institute
Kem. u Ind., Zagreb		**		Kemija u Industriji [Zagreb]
Klin. Wochschr				Klinische Wochenschrift
Kunststoffe				Kunststoffe
Lab. Delo		70		Laboratornoe Delo [Moscow]
F. A. Thomas Co.			* *	Laboratornoe Delo [Moscow] Laboratory Practice
Lancet			**	Lancet
Magyar Kém. Foly.				Magyar Kámini Folyájrat
Magyar Kém. Lapja	* *	**		Magyar Kémiai Folyóirat Magyar Kémikusok Lapja
Medd. Norsk Farm. Selsk.	• •		**	Meddelelser fra Norsk Farmaceutisk Selskap
areas, Atoron L'arm, Joist.		**		meddeleset ita Moisa Patmaceutisk Sciskap

				JOORNALS
Abbreviated T	itle			FULL TITLE
Mém. Poudres				Mémorial des Poudres [Paris]
				Metallurgia [Manchester]
Metallurg. Ital				Metallurgia Italiana [Milan]
Microchem, I.				Microchemical Journal
Mikrochim. Acta				Mikrochimica Acta [Vienna]
Mitt. Lebensmitt. Hyg., Ber	rn			Mitteilungen aus dem Gebiete der Lebensmitteluntersuchung und Hygiene [Bern]
Monatsh. Chem		**		Monatshefte für Chemie und verwandte Teile anderer Wissenschaften [Vienna]
Vahreena				Nahrung
Nahrung	* *	* *		Nature [London]
Nature Naturwissenschaften			* *	Naturwissenschaften
Nehézvegyipari Kutató Int	tézet K	özlemén	iyei	Nehézvegyipari Kutató Intézet Közleményei [Budapest]
Nucleonics				Nucleonics New Zealand Journal of Science
				to the content of the
Off. Dig. Fed. Paint Varn.	. Prod.	Cl.	**	Official Digest, Federation of Paint & Varnish Production Clubs
Oil Gas J				Oil and Gas Journal [Tulsa, Okla.]
Olii Min				Olii Minerali, Grassi e Saponi, Colori e Vernici
Optika i Spektroskopiya			* *	Optika i Spektroskopiya
Öst. ChemZtg			* *	Österreichische Chemiker-Zeitung
Parfum. Cosmét. Savons				Parfums, Cosmétiques, Savons
PeintPigmVern.				Peintures-Pigments-Vernis
Perfum. Essent. Oil Rec.	**			Perfumery and Essential Oil Record
Period. Polytech		**	* *	Periodica Polytechnica [Budapest]
Pharm. Acta Heln.				Pharmaceutica Acta Helvetiae
Pharmazie	* *			Pharmazie
Pharm. J	* *	* *		Pharmaceutical Journal
Pharmazie				Pharmaceutical Journal Pharmaceutisch Weekblad Pharmazeutische Zentralballe für Deutschland
Pharm. Zentrain				Pharmazeutische Zentrainalle für Deutschland
Plaste u. Kautsch	* *	* *	* *	Plaste und Kautschuk Plating
Plating Pracovní Lékařství	* *			Pracovní Lékařství [Prague]
Proc. Amer. Soc. Brew. Ch	hem			Proceedings. American Society of Brewing Chemists
Proc. Chem. Soc	wer.			Proceedings of the Chemical Society [London]
Proc. Indian Acad. Sci.				Proceedings of the Indian Academy of Sciences
Proc. Soc. Exp. Biol. Med				Proceedings of the Society for Experimental Biology and Medicine
Proc. Soil Sci. Soc. Amer.				Proceedings. Soil Science Society of America
Průmysl Potravin				
DC Int Sub Smit				Dandisonti Istituta Superiore di Canità
R.C. Ist. Sup. Sanit.	* *	* *	* *	Rendiconti Istituto Superiore di Sanità Receuil des Travaux Chimiques des Pays-Bas
Rec. Trav. Chim. Pays-Ba Rep. Gov. Chem. Ind. Res.	. Inst.,	Tokyo		Reports of the Government Chemical Industrial Research
Pan Assa Birmin A	andias -			Institute [Tokyo]
Rev. Asoc. Bioquim. Arger Rev. Chim., Acad. R.P.R.				
				Roumaine
Rev. Chim., Bucharest Rev. Inst. Franç. Pétrole	* *			Revista de Chimie [Bucharest] Revue de l'Institut Français du Pétrole et Annales des
				Combustibles Liquides [Paris] Review of Scientific Instruments
Ric. Sci. Instrum				Ricerca Scientifica
Riechstoffe u. Aromen				Riechstoffe und Aromen
Roczn. Chem.				Roczniki Chemii [Warsaw]
Rubb. Age, N.Y.				Rubber Age [New York]
Rudy	**			Rudy [Prague]
C AG. Ind Cham				South African Industrial Chemist
S. Afr. Ind. Chem Sb. Véd. Prac., Vysoké				Sborník Vědeckých Prací Vysoké Školy Chemicko-Tech
Technol., Pardubice		**		nologické v Pardubícich [Czechoslovakia]
Scand. J. Clin. Lab. Inves			* *	Scandinavian Journal of Clinical & Laboratory Investigation
Schweiz. BrauRdsch.				Schweizer Brauerei-Rundschau
Sci. & Cult				Science and Culture [Calcutta] Science
Science			* *	Scientia Pharmaceutica [Vienna]
Sci Pharm				
Sci Pharm	ku Un	iv.	**	Science Reports of the Research Institutes. Thooky University
Science Sci. Pharm Sci. Rep. Res. Insts, Tôho Sewage Ind. Wastes	ku Un	iv.		Science Reports of the Research Institutes, Tohoku University
	ku Un	iv.		Science Reports of the Research Institutes, Tôhoku Universit; Sewage and Industrial Wastes Sklář a Keramik [Prague] Soap and Chemical Specialties [New York]

Abbreviated Title		FULL TITLE
Soil Sci	S	oil Science
Soudní Lékařství	S	oudní Lékařství [Prague]
C		pectrochimica Acta
C74 to \$	F-1	tärke
		tudii și Cercetări de Chimie [Cluj]
Stud. Cercet. Chim., Cluj	5	tudii și Cercetari de Chimie [Ciuj]
Stud. Cercet, Stiint. Chim., Iași		tudii și Cercetări Sțiințifice Chimie [Iași]
Suomen Kem		uomen Kemistilehti [Helsinki]
Svensk Papp-Tidn	S	vensk Papperstidning [Stockholm]
Talanta	Т	alanta
TAPPI	T	APPI
Tetrahedron		etrahedron
Text. Res. J		extile Research Journal
Tidsskr. Kjemi, Bergv. Metallurgi		idsskrift for Kjemi, Bergvesen og Metallurgi [Oslo]
I tasser. Kjemi, Bergu. Metatturgi		
Trans. Brit. Ceram. Soc		ransactions of the British Ceramic Society
Trans. Faraday Soc		ransactions of the Faraday Society
Trans. Inst. Met. Finish	T	ransactions of the Institute of Metal Finishing
Trans. Metallurg. Soc. AIME	T	ransactions of the Metallurgical Society of AIME
Trudy Inst. Metallurgil, Akad. Nauk S.	SSR T	rudy Instituta Metallurgii, Akademiya Nauk SSSR
Trudy Khim. i Khim. Tekhnol		rudý po Khimii i Khimicheskoi Tekhnologii, Nauchno Issledovateľskii Institut Khimii Gosudarstvennogo Un
		versiteta im N.I. Lobachevskago
Trudÿ Komiss. Anal. Khim., Akad. N SSSR	auk T	rudy Komissii po Analiticheskol Khimii, Akademiya Nau SSSR
Trudÿ Leningr. Tekhnol. Inst. im Lenso	veta T	rudÿ Leningradskogo Tekhnologicheskogo Instituta imer Lensoveta
Uch. Zap. Rostovsk. Univ	U	chenye Zapiski Rostovskogo na Donu Gosudarstvennog Universiteta
Ukr. Khim. Zhur	U	krainskil Khimicheskil Zhurnal
U.S. Atomic Energy Comm		nited States Atomic Energy Commission. Reports.
Verfkroniek	V	erfkreniek [Amsterdam]
Vestn. Leningr. Univ., Ser. Fiz. i Khim		estnik Leningradskogo Universiteta, Seriya Fiziki i Khim
Vestn. Moskov. Univ., Ser. Khim.		estnik Moskovskogo Universiteta, Seriya Khimiya
Vitamine Kauto		itamins [Kyoto]
Vitamins, Kyoto		
voaa	V	oda
Wat. & Sewage Wks	W	Jater & Sewage Works
Z. anal. Chem		eitschrift für analytische Chemie
Zavod. Lab		avodskaya Laboratoriya [Moscow]
Z. Erzbergb. Metalhüttenw	Z	eitschrift für Erzbergbau und Metalhüttenwesen
Z. ges. exp. Med		eitschrift für die gesamte experimentelle Medizin [Berlin]
Chur. Anal. Khim		hurnal Analiticheskoi Khimii
		hurnal Neorganischeskol Khimii
Zhur Neorg Khim		hurnal Obshchel Khimii
	- 1	numai Obsilenci Khimii
Zhur. Obshch. Khim		1 - 1 73 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Zhur. Obshch. Khim	Z.	hurnal Prikladnoi Khimii
Zhur. Obshch. Khim. Zhur. Prikl. Khim	Z	eitschrift für Lebensmittel-Untersuchung und -Forschung
Zhur. Obshch. Khim. Zhur. Prikl. Khim	Z	eitschrift für Lebensmittel-Untersuchung und -Forschung eitschrift für Metallkunde
Zhur. Obshch. Khim. Zhur. Prikl. Khim. Z. LebensmittUntersuch. Z. Metallk.	Z	eitschrift für Lebensmittel-Untersuchung und -Forschung eitschrift für Metallkunde
Zhur. Obshch. Khim. Zhur. Prikl. Khim. Z. LebensittUntersuch. Z. Metallk. Z. Naturf.	Z	eitschrift für Lebensmittel-Untersuchung und -Forschung eitschrift für Metallkunde eitschrift für Naturforschung
Zhur. Obshch. Khim. Zhur. Prikl. Khim. Z. LebensmittUntersuch. Z. Metalik.	Z Z Z Z Z.	eitschrift für Lebensmittel-Untersuchung und -Forschung eitschrift für Metallkunde

ACKNOWLEDGEMENTS

The organisations publishing the following journals are thanked for allowing reproduction of some abstracts.

British Baking Industries Research Association Abstracts
Chemical Abstracts
Metallurgical Abstracts
Nuclear Science Abstracts
Nutrition Abstracts and Reviews
Referativnyl Zhurnal, Khimiya
Referativnyl Zhurnal, Khimiya, Biologicheskaya Khimiya
Rubber Abstracts
Sugar Industry Abstracts
Water Pollution Abstracts

ERRATA

```
VOL. 5, 1958
   Abstract
      No.
                Line
      350
                  3 for Syoichi Yamada read Shoiti Yamada
     2726
                   4 for Hayakawa read Hayami
     3202
                  4 for Syoichi Yamada read Shoiti Yamada
VOL. 6, 1959
     Index p. viii. The entry under Bankmann, E., and Specker, H., refers to Abstract No. 557.
     Index, p. lxxxiii, for Bykowski, I., read Nykowski, I.
Vol. 7, 1960
   Abstract
      No.
                Line
                   3 for B. A. Zhukova read N. A. Zhukova
       40
                   I for thallium read thorium
       57
      149
                     for Ozman read Osman
                     for G. R. Weidmann read G. Weidmann
      152
      408
                   2 for Takeo read Taeko
                   3 for W. F. Luky'anov read V. F. Luk'yanov
      440
                   4 for Fujimaga read Fujinaga
      458
                   2 for J. Janoušek read I. Janoušek
3 for Zelentskaya read Zelenetskaya
      532
      558
                  23 for citreonellal read citronellal
      575
                   8 for K-phthalate read K H phthalate
      586
      610
                   2 for F. Maggiorelli read E. Maggiorelli
                   4 for M. R. Roth read M. Roth
      632
                   9 for ethanolic-fluoro-2: 4-dinitrobenzene read ethanolic 1-fluoro-2: 4-dinitrobenzene
      672
                   2 insert Electrophoresis. V. before Paper
2 for G. Cavicchi and Sandri read G. Cavicchi Sandri
     1060
      1168
      1289
                   2 for Z. A. Tsimmergekl read V. A. Tsimmergakl
                   2 for E. Penna read E. Penna-Franca
1 for E. Penna read E. Penna-Franca
      1365
      1386
      1452
                   2 for Iacobelli read Jacobelli
      1465
                   2 for G. E. Esposito read G. G. Esposito
                   9 for Calcium and Mg read Heavy metals
     1472
                   3 for Fiserová-Bergerová read Fischerová-Bergerová
      1478
      1771
                   2 for H. Wagner read Heribert Wagner
      1806
                      The phrases given in parentheses in lines 7 to 9 and in lines 11 to 12 should be inter-
                        changed.
                   2 for H. Zimmermann read Helmut Zimmermann
      1950
      2079
                   3 for Voinovich read Voinovitch
      2219
                   3 for Hayashi read Hayami
                    9 for 0.05% read 0.5%
      2272
                   2 for K. Sato read Koichi Sato
      2333
      2458
                    5 for (24 8) read 42 (8)
3 for Svoiti Yamada read Shoiti Yamada
      2528
                  11 for 52.3 read 5.23
      2682
                      for 553-564 read 555-564
      3107
      3120
                    3 for A. Aziz Amin read A.-A. M. Amin
                    2 for B. Banerjea read D. Banerjea
      3137
                   3 for Tszé Yun'-Syan read Yun'-Syan Tszé
3 for V. F. Prokof'ev read V. K. Prokof'ev
      3170
      3230
                      The abstract following 3545 is wrongly numbered and should be 3546. for W. H. Smit read W. M. Smit
      3611
      4016
                    3 for V. Davidek read J. Davidek
      4017
                    2 for R. E. Saltzman read B. E. Saltzman
                    3 for D. W. Wilson read David Woodburn Wilson
      4079
      4094
                    2 for A. M. Amin read A.-A. M. Amin
                    3 for A. A. Amin read A .- A. M. Amin
      4113
                    3 and 18 for Shoichi Yamada read Shoiti Yamada
      4288
      4307
                   12 for Ge'man read Gel'man
                    1 insert Quantitative organic analysis. XXVI. before Paper
      4310
                    1 for glycol read glycerol
7 for HIO<sub>3</sub> read HIO<sub>4</sub>
      4330
      4330
                   16 for IO<sub>3</sub> read IO<sub>4</sub> 2 insert V after control.
      4330
      4466
                    3 for Googeveen read Hoogeveen
      4557
      4911
                    3 for Sobelewski read Sobolewski
```

4943

2 insert VI after method).

ERRATA

Vol. 7, 1960 Abstract No.	Line
4948	3 for H. Zimmermann read Hildegard Zimmermann
4969	3 for D. W. Wilson read D. Wright Wilson
4975	2 for Longchampt read Longchamps
5125	34 for H. Pfeiffer read H. G. Pfeiffer
5136	2 for van Niekerk read Van Niekerk
5193	2 for H. Hartmann read Hilda Hartmann
5228	3 for Li Gỹn read Gỹn Li
5255	3 for A. Lipińska-Kostrowicka read H. Lipińska-Kostrowicka
5361	2 for H. Wagner read Hildebert Wagner
5404	3 for Ianu read Iancu
5437	4 for F. C. Ramusino read F. Cotta-Ramusino
5511	3 for D. W. Wilson read David Woodburn Wilson

Cross references after Abstr. 632, line 7, for 896 read 806

Note-Some errata subsequently published in the journals abstracted are included.

PUBLISHED BY

The Society for Analytical Chemistry

INDEX TO VOLUME 7

ANALYTICAL

you comercion

The Society for Analytical Chemistry

INDEX TO VOLUME 7

INDEX OF AUTHORS

Aas, H. W. See Bystedt, J., 1174.
Abdalla, A. See Barakat, M. Z., 5208.
Abd El Raheem, A. A. See El Raheem, A. A. Abell, J. F. See Pommer, A. M., 1633.
Ablov, A. V., and Batÿr, D. G. Micro-determination

of sugars by means of a copper compound of trihydroxyglutaric acid, 4331.

Abraham, N. A. See Vilkas, M., 2814. Abramichev, Yu. V. See Moroshkina, T. M., 5229. Abramovich, E. S. Colorimetric determination of ionic detergents, 4869.

Abramson, E. Detection of nitrogen during the determination of carbon and hydrogen, 1049.

and Laurent, J. Micro-determination of traces of nitrogen in organic substances by the modified Pregi - Dumas method, 1050.

Abrão, A. Analysis by activation. III. Simultaneous determination of copper and uranium in minerals by radioactivation, 4130.

See also Lima, F. W., 4741.

Abrasheva, P. See Stamenova, N., 2434, and Stoicheva, L., 2505.

Achmeteli, H. I. Determination of hexachlorophane

in a dentifrice in the presence of methyl salicylate.

Acker, L., and Kaiser, H. Determination of choline,

Ackerman, J. A., and Myers, J. T. Elimination of cross-contamination in the determination of protein-bound iodine, 4956.

Ackermann, H. Biological determination of vitamin

D. Prophylactic X-ray method, 5455.

Adams, C. W. M., and Davison, A. N. Histochemical identification of myelin phosphoglycerides by their ferric hydroxamates, 218.

Adams, D. F., and Koppe, R. K. Automatic atmospheric fluoride pollutant analyser, 1184. Gas-chromatographic analysis of hydrogen sulphide, sulphur dioxide, mercaptans (thiols) and

alkyl sulphides and disulphides, 2702.

Adams, M. L., and Swann, M. H. Colorimetric determination of urea in urea-formaldehyde

resins, 2856.

Adams, P. A. See Clayton, M. M., 1500.

Adams, P. B., and Williams, J. P. Modified glass still for fluoride analysis by pyrohydrolytic separation, 1192.

Adams, R. E. See Lady, J. H., 626. Adams, R. W. See Loveland, J. W., 65, and

Rosenbaum, E. J., 773.
Adamson, D. C. M., and Simpson, J. S. [International Symposium on Microchemistry. Birmingham, 1958.] Microbiological assay of antibiotics, vitamins and amino acids, 3102.

Addabo, A. de. See Göbel, P., 691. Addink, N. W. H. Determination of trace elements in steel, 4276.

Adell, M. R. See Roca Adell, M. Adey, K. A. Cryoscopic method for assaying β-picoline, γ-picoline and 2:6-lutidine, 1815.

and Cox. J. D. Determination of small amounts of a-picoline in pyridine by a solution-temperature method, 1086.

Adrian, J. Microbiological determination of vitamins of the B group, 2488.

Aeschlimann, F., Bethge, P. O., and Eggers, J. H. Colorimetry of furfuraldehyde. II. Reaction with phenols of the resorcinol type, 3829.

Afanas'eva, L. I. Use of EDTA in the separation of barium, strontium and calcium, 398.

See also Yashchenko, M. L., 871.
Afanas'eva, L. M. See Busev, A. I., 2650.
Affens, W. A., Haenni, E. O., and Fulton, R. A. Determination of dichlorodifluoromethane fumigation mixtures with ethylene oxide by measurement of thermal conductivity, 1781.

Afremow, L. C. See Juvet, R. S., jun., 3820.

Aftalion, H. See Sterescu, M., 2437.

Agarwal, S. P., Aggarwal, R. C., and Srivastava,
T. N. Use of p-cresotic acid and its derivatives for the estimation of thorium and zirconium,

See also Srivastava, T. N., 2151.

Agasyan, P. K. Apparatus for the coulometric titration and determination of zinc by the generation of potassium ferricyanide, 4680.

Ageev, N. V., Ponomarev, A. I., and Trapeznikov, V. A. Determination of oxygen in high-purity chromium, 3222.

Aggarwal, R. C. See Agarwal, S. P., 2682, and Srivastava, T. N., 2151.
Agranoff, B. W. See Seliger, H. H., 1660.
Agrawal, K. C. See Verma, M. R., 965.

Agroskin, L. S., and Korolev, N. V.

spectrophotometers, 2562.

Agte, A. N. Detection of potassium ion in the presence of ammonium ion, 878.

Agterdenbos, J. Determination of barium as sulphate, 2081.

Aguayo, N. See Urrutia, H., 560.

Ahrens, L. H. See Brooks, R. R., 4798, and Edge, R. A., 162.

Ahuja, I. S. See Taimni, I. K., 1642. Aia, M. A. See Ropp, R. C., 898. Aiba, K. Determination of phosphorus in vanadium steel, 1759: 3755.

Aikawa, J. K., and Rhoades, E. L. Magnesium-28 studies of the molybdovanadate method for magnesium, 3863.

Aikin, A. M., and Bruce, T. Analysis for plutonium by counting methods, 118. Aimonen, B. See Hirsjärvi, V. P., 3236. Aimoto, Y. See Kitagawa, H., 525. Ainge, A. D. Plummet for the estimation of specific

gravity, 3023.

Aizenberg, L. N. Detection of aluminium ions with 5-hydroxy-1:4-naphthaquinone (juglone), 3157.

Akasu, F., and Ohki, H. Fluorescence spectra of oestrogens, and the selection of primary and secondary filters, 689.

Akaza, I. See Kiba, T., 1338, 4686.

Akerfeldt, S. Preparation and determination of sodium hydrogen S-(2-aminoethyl) phosphorothioate [sodium hydrogen cysteamine S-phosphate], 1866.

Akerman, L. See Chance, B., 2556.
Aksenenko, V. M. See Onutrienok, I. P., 3218.
Albers, P., and Freiskorn, R. Quantitative paperchromatographic determination of sugars, 1062. Albersmeyer, W. See Krampitz, G., 2794.
Albert, D. K., and Granatelli, L. Determination of

arsenic in naphthas with an oxy-hydrogen burner,

Alberti, S. See De Felip, G., 1894. Albert-Recht, F. Quantitation of plasma proteins

on cellulose acetate strips, 1512. Alberts, G. S. See Nyman, C. J., 4235. Albescu, I. See Pirtea, D., 1189, and Spacu, P.,

Albrink, M. J. Micro-titration of total fatty acids of serum, with notes on the estimation of tri-

glycerides, 5360.

Alcides Ohlweiler, O., and Oliveira Meditsch, J. de. Indirect absorptiometric determination of cyanide by means of the mercuric - diphenylcarbazone reaction, 921.

Aldrich, J. C. See Samsel, E. P., 1204.

Aleksandrov, G. P., and Tikhonova, V. S. Determination of ammonia in the presence of nitrites,

Aleksandrov, V. V., and Borok, M. T. Gas analyser for automatic measurement of low concentrations of nitrogen in argon by a spectrophotometric method, 4576.

Alekseeva, V. M., and Rusanov, A. K. Quantitative determination of scandium by spectrographic

analysis, 4175.

Aleskovskii, V. B., Libina, R. I., and Miller, A. D.
Micro-determination of lead and copper in solutions by a preliminary enrichment on an ion-exchange column, 1698.

Setkina, O. N., Kochneva, V. A., and Lyadov, V. S. Spectrographic determination of lithium and caesium in the flame of thermite flares, 873. and Tsÿplyatnikov, G. P. Determination of fluorine and impurities in technical fluorine,

See also Boichinova, E. S., 886, Dobÿchin, S. L., 864, and Tyutina, N. A., 463.
 Alexander, J. B. See Walsh, E., 3149.
 Alexander, J. G., and Parkes, J. Estimation of protein in the cerebrospinal fluid, with the

M.R.C. photometer, 3440.

Alferova, V. N. See Ugnyachev, N. Ya., 526. Alfonsi, B., and Bussi, M. Gravimetric determina-tion of aluminium in bronze and brass, 5171.

Alfonso, N., and Lopez, E. Determination of the odour value of Mexican garlic, 4477.

Alford, J. A. See Hornstein, I., 5032. Algeri, E. Determination of glutethimide in whole blood, 1117

Alimarin, I. P., Golovina, A. P., and Puzdrenkova, I. V. Absorption spectra of the hydroxyquinolinates of some less common elements. Photometric determination of titanium, 1317.

and Shen, H.-S. Quantitative determination of scandium with the use of mandelic acid,

4174.

- Tsintsevich, E. P., and Burlaka, V. P. Behaviour of complex compounds of indium, zinc and cadmium in ammonium carbonate solution on ion-exchange resins, 3167.

Tsintsevich, E. P., and Gorokhova, A. N. Separation of gallium from zinc in ammonium

carbonate solution by means of an ionite, 4166.

and Tszé, Y.-S. Determination of zirconium with N-benzoyl-N-phenylhydroxylamine, 2672. Determination and separation of scandium by means of N-benzoyl-N-phenylhydroxylamine, 3170.

See also Savostin, A. P., 4227, Sotnikov, V. S., 3206, 4197, and Tsintsevich, E. P., 1307.
 Alkemade, C. T. J. See Avni, R., 5103.
 Allais, G., and Curien, H. Determination of boron-10 in minerals, 909.

Allam, M. G. E. See Issa, I. M., 3742. Allan, J. E. Determination of iron and manganese by atomic absorption, 3252.

and Clinton, O. E. Automatic apparatus for the Lundegardh method of analysis, 2012.

Allan, W. J., and Gahler, A. R. Determination of free hydrofluoric acid in tantalum - niobium - hydrofluoric acid solutions by near-infra-red spectrophotometry, 2718.

Allard, J., Bonnemay, M., and Darrécamp, C.
Methods for potentiometric determination of

tervalent chromium, 1339.

Allavena, S. Methods of carotene analysis, 2965.
Allen, J. G., and Wood, J. C. S. Fluorescentindicator adsorption analysis using the chromanalyser, 836.

Allen, M. de V. See Robinson, J. B. D., 3017.
Allen, P. L. See Ellis, J. F., 3735.
Almássy, G., and Vígvári, M. Micro-identification and the colorimetric micro-determination of molybdenum^{VI} with morin, 1729.

Almeida, L. de, Barros, M. I. de, and Grade, M. R. S. Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Spectrographic determination of some lanthanides.

Alpert, N. L., Behnke, F., and Strauss, P. A. A new i.r. spectrometer in the 12.5 to 25-µ region, 3072. See also White, J. U., 1212.

Al-Qaraghuli, N., and Stone, K. G. Chloride-free reference electrode for use in acetic acid solvent, 1636

Alson, J. H., III. See Ayres, G. H., 1029.
Altamari, L. A. See Heumann, F. K., 3103.
Altpeter, L. L. See Fassel, V. A., 5214.
Altshuller, A. P., Schwab, C. M., and Bare, M.
Reactivity of oxidising agents with potassium

iodide reagent, 3282.

Ultra-violet determination and Wartburg, A. F. of nitrogen dioxide as nitrite ion, 4214.

See also Cohen, I. R., 2286. Alvarez, Q. See Burriel-Marti, F., 400.

Alvarez-Arenas, E. A. See Asensi Alvarez-Arenas,

Alvarez Gonzalez, F. See Roca Adell, M., 439. Alves, V. F. See Ferreira Alves, V. Alway, C. D. See Olson, E. C., 5106. Amakasu, O. See Ito, A., 2935.
Amani, A. A. See Anand, V. D., 4738.
Amano, A. See Kammori, O., 1727.
Amano, H. Radiometric titration of niobium and

tantalum in steel, 537. Analytical methods for trace elements in metals with radioactive isotopes. IV. Determination of aluminium with calcium-45 type cation exchanger, 2640; V. Determina-tion of hafnium in zirconium by the isotope dilution method, 2678.

Amberg, C. H., Echigoya, E., and Kulawic, D. Quantitative gas chromatography of reaction products from the catalytic oxidation of ethylene, 173.

Ambs, E. See Gross, W., 5409. Amdurer, S. See Edge, R. A., 162. Amer, M. M. A. See Issa, I. M., 3742. American Society for Testing Materials. Deter-

mination of the sulphur content of carbon black, 953. Bromine number of petroleum distillates by electrometric titration, 5313. Sulphur in petroleum products, including liquefied petroleum gas, by lamp combustion, 5314. Methods of test for coke residue of creosote and distillation of creosote, 5319.

American Water Works Association. Determination of synthetic detergent content of raw water supplies, 781.

Ames, S. R., and Lehman, R. W. Estimation of the biological potency of vitamin-A sources from their maleic values, 4496.

Amin, A.-A. M., El Raheem, A. A. A., and Osman, F. A. Eriochrome black A as reagent for spectrophotometric micro-determination of cobalt in the presence of nickel, 149.

Khalifa, H., and Moustafa, A. S. Solochrome green V as a new analytical reagent, 4094.

See also El Raheem, A. A. A., 3120, 4113.

Amo, P. A. G. See Gutiérrez Amo, P. A.
Amormino, V. See Bucci, F., 730.
Amphlett, C. B., McDonald, L. A., Burgess, J. S.,
and Maynard, J. C. Synthetic inorganic ionexchange materials. III. Separation of rubidium and caesium on zirconium phosphate, 5147.

Anand, V. D. Alkaline ferricyanide titration of

cobalt in dilute solution, 5253.

and Deshmukh, G. S. 2:4-Dinitrophenylhydrazone of diacetyl monoxime: a new sensitive reagent for cobalt, 3763. Determination of cobalt as tellurite, 3765. Determination of cobalt as selenite, 5252.

Prasad, B. N., and Amani, A. A. Electrometric estimation of bismuth, 4738.

— See also Deshmukh, G. S., 3766. Anantakrishnan, C. P. See Praphulla, H. B., 5430. Anantanarayanan, K. G., Kudalkar, V. G., Madiwale, M. S., Desai, H. H., and Walawalkar, M. B. Estimation of halogen derivatives of 8-hydroxyquinoline, 2947.

Anater, T. F. See Jacobs, R. M., 2140.

Anbar, M., and Guttmann, S. Isotopic analysis of oxygen in inorganic compounds, 2182.

Anderegg, G. See Schubert, J., 3608. Anders, F. See Bayer, E., 1615.

Anderson, C. A. See Meagher, W. R., 1974.

Anderson, C. J., and Strange, B. Colorimetric determination of urea in whole blood, serum, plasma or urine, 4408.

Anderson, D. A., and Freeman, E. S. Characterisation of saturated polyesters by differential thermal analysis, 2342.

Anderson, D. M. W., and Duncan, J. L. Solid scrubbers in the Zeisel alkoxyl determination, 3295

Anderson, E. L. Centrifugal filtration apparatus,

Anderson, J. R. A., Garnett, J. L., and Lock, L. C. Use of naphthalene derivatives in inorganic VIII. Effect of substituents in the analysis. naphthalene nucleus on the fluorimetric detection of tin, 3686.

Anderson, L. See Miller, G. W., 2252. Anderson, R. A. See Hamilton, P. B., 1857. Anderson, R. E. See Paulsen, T. M., 5014.

Anderson, S., and Rost, W. J. Proposed assay for Benzoic and Salicylic Acid Ointment U.S.P.,

Anderson, W. M., Carter, G. B., and Landua, A. J. Quantitative analysis of commercial bisphenol A by paper chromatography, 1081.

Andersson, L. H. Studies in the determination of silica. II. Separation of molybdophosphate from α-molybdosilicate, 2117.

Andreev, A. S. Concentration by sublimation in the determination of small amounts of impurities in antimony, 3205. Methods for the determination of selenium in chromium - nickel steel, 3759.

- and Kain, S. Photometric determination of copper in aluminium and steel with diethyldithiocarbamate, 3632.

Marshikova, A., and Telyatnikov, G. V. Determination of magnesium and calcium in crude aluminium and argillaceous materials (bauxite), Andreev, A. S., Novikov, A. N., and Cherny, F. Determination of calcium and magnesium in nickel and nickel alloys, 3269.

and Pospelova, N. A. Determination of small amounts of phosphorus, calcium, magnesium and

copper in complex steels, 3756.

Andrewa, M. I. See Gorshchenko, Ya. G., 2699.
Andrew, E. R. Nuclear magnetic resonance in solids, 3589.

Andrew, M. L., and Weiss, P. J. Solubility of antibiotics in twenty-four solvents. II, 707.

Andrew, T. R., and Gentry, C. H. R. Analysis of nickel. I. Chemical methods, 545.

Andrews, R., Bark, L. S., and Dowson, W. M. Studies in qualitative inorganic analysis. XI. Oxidation of hydrogen sulphide to sulphate by nitrate ions, 98.

Anfinsen, C. B. See Katz, A. M., 3436. Angelescu, E., and Barbulescu, N. Determination of acetic anhydride by a rapid thermometric method, 182.

Angelini, P. See Merritt, C., jun., 3502. Angell, C. L., Krueger, P. J., Lauzon, R., Leitch, L. C., Noack, K., Smith, R. J. D., and Jones, R. N. Carbonyl stretching frequency of cyclopentanone, 3818.

Anger, V. Microchemical reaction for nitroso compounds, 3797.

— See also Feigl, F., 3875, 4319, 4835, 4851.

Angot, J. See Mevel, N., 4031.

Anibal, R. P. Zirconium crucibles for sodium

peroxide fusions, 4540.

Ansari, S., and Khan, R. A. Colorimetric assay of cortisone and cortisol, 4455.

Anselmi, E. See Cavina, G., 5388.

Anselmi, S. Analysis of olive oil, with particular regard to colour reactions, 1938.

Boniforti, L., and Monacelli, R. Isolation, examination and determination of polyoxyethylene glycol (Carbowax) surface-active agents added to edible fats, 1578. Detection of small amounts of castor oil in vegetable or animal oil, 1941. Vapour-phase chromatographic analysis of fats. I. Detection of esters of methanol and Vapour-phase chromatographic analysis of ethanediol, 2996; II. Technique employed and chromatograms of some vegetable and animal oils and fats, 5445. Detection and determination of surface-active agents (Carbowax) in bread and

similar products, 5434.

Anson, F. C. See Mather, W. B., jun., 3585.

Antal, J. J. See Goland, A. N., 332.

Antal, P. See Korkisch, J., 780, 3195, 4212, 4245. Antikainen, P. J. Separation and qualitative determination of micro amounts of nickel and cobalt by the Weisz ring-oven method, 153.

Antognoni, G. See Bottini, E., 1855. Antokolskaya, Zh. A. See Rodinov, V. M., 3914.

Anton, A. See Mullen, P. W., 4088.
Antonacci, M. Volumetric determination of free and combined oleic acid, 5450.

Antonaci, B. L., Del Giovane, L., and Macagnino, G. Paper-electrophoretic determination of fibrinogen,

Antonescu, E. See Spacu, P., 1551, 2949, 4460, 5226, 5334...

Antonescu, V., and Neagu, V. Correction factor for Geiger - Müller measurements of radioactivity and cosmic radiation, 4622

Antoszewski, R. Device for the application of spots of test solution to chromatograms, 805. and Antoszewska, L. T. Method for the detec-

tion of small amounts of a-amino acids, 1133.

Antoszewski, R., and Knypl, J. S. Chemi-chromatographic method for determination of phosphate, 2162. Chemi-chromatographic micro-determina-

tion of phosphorus, 4731.

— See also Knypl, J. S., 4055, 4939.

Aoki, M., and Iwayama, Y. Determination of ionic surface-active agents with dyes. I. Erythrosin and eosin methods, 3369; II. Toluidine blue method, 3369.

Aparicio, M. See Kaufmann, H. P., 2481.
Apodaca, R. A. See Aragonés Apodaca, R.
Appalaraju, N. See Rao, G., 406.
Apple, R. E. See Wharton, F. D., jun., 1945.
Apple, R. F. See White, J. C., 335.
Appleton, M. D., and Burns, R. J. Gettler and
Lumberger method for colorimetric analysis

Umberger method for colorimetric analysis,

Aragonés Apodaca, R. Colorimetric methods for the determination of phosphorus in carbon steel and cast iron, 1012

Arai, T. See Sobue, H., 562.

Araki, H. See Nozaki, Tadashi, 4702.

Araki, T., and Goto, R. Gas-liquid partition chromatography of m- and p-xylenes on 1-naphthylamine, 3813.

Aranovich, M. I. See Miller, A. D., 5185.

Arbore, E. See Bruno, S., 2939.

Archakova, T. A. See Goryushina, V. G., 1730.

Arcus, A. C. Drop-counting fraction-collector accessories, 1198. Nephelometric detection of lipids in chromatographic-column effluents, 2382.

Arend, I. See Chomse, H., 2799.
Arendt, I., and Schenck, H.-J. Paper chromatography in the analysis of polyesters. II, 1795.
Arfin, S. M. See Skipski, V. P., 216, 5451.
Arich, G. See Costantinides, G., 2826.

Ariel, M., and Selzer, G. Polarographic determination of chromium in aluminium alloys, 3220.

Arimura, A., and Dingman, J. F. Assay method for vasopressin and oxytocin using glass-fibre paper chromatography, 3479.

Arita, T. See Kakemi, K., 3476.

Armeanu, V., Camboli, D., and Iancu, C. Detection

of nickel, 544. Detection of tervalent iron, 999. Căplescu, N., and Mihail, G. Semi-micro method for the gravimetric determination of copper in the presence of mercury, 375. Semi-micro method for the gravimetric determination of mercury in the presence of copper, 405. Armitage, F. Analysis of isoprene by gas chromato-

graphy, 3300. Arnal, T. G. y. See Gaspar y Arnal, T. Arnett, E. M., Strem, M., Hepfinger, N., Lipowitz, J., and McGuire, D. Deuterium analysis, 4656. Arnold, L. K. See Choudhury, R. B. R., 5444.

Arpino, A., and Ricca, G. S. Infra-red spectrophotometry in the analysis of olive oil, 3515. Arrak, A., and Mitteldort, A. J. Accuracy in spectrochemical analysis, 2034.

Arreguin, B. Paper chromatography of sugar phenylosazones as their borate complexes, 1412.

Arret, B. See Kirshbaum, A., 708, 3471, 5412.

Arribas Jimeno, S. Determination of chromium and vanadium in tungsten steel, 1761. Determination of ferrocyanides in the presence of ferricyanides, cyanides and thiocyanates. I. Gravimetric method, 3253.

- and Losa, B. Determination of ferrocyanides in the presence of ferricyanides, cyanides and

thiocyanates. II. Volumetry, 4786.

Artemenko, A. R. See Khristoforov, B. S., 903.

Articolo, O. J. Colorimetric determination of vanadium in niobium - vanadium alloys, 2169.

Asai, M. See Yoshida, S., 191. Asai, R. I. See Hartley, A. M., 4516. Asensi Álvarez-Arenas, E. See Sampedro Piñeiro,

A., 2031.

Asensi Mora, G. Redox processes in complexo-metry. III. Systems in which a redox pair, whose potential is modified by EDTA, is employed externally, 856.

Ashbolt, R. F. See Skelding, A. A., 2269. Ashbrand, M. See Korthum, K., 5323. Ashley, M. G. Determination of organomercury

residues in plant material, 3542.

Ashley, R. W., and Jones, R. W. X-ray fluorescence methods in the analysis of Zircaloy, 2134.

See also Bruce, T., 926, and Jones, R. W., 2229. Ashley, W. H. See Henicksman, A. L., 3382.
Ashman, D. F. Colorimetric determination of

glutamic - oxalacetic transaminase in serum or plasma, 1532.

Ashratova, Sh. K. Volatility of boric acid from solutions and mixtures, 3659.

Ashton, D. M. See Wyngaarden, J. B., 1534. Ashwell, G. See Cynkin, M. A., 5276. Ashworth, M. R. F. Turbidimetric micro-method

for analysis of tert.-butyl alcohol, 178. Effect of some organic solvents on the turbidimetric analysis of tert.-butyl alcohol, 4327.

See also Walisch, W., 171.

Asklund, A. M. See Assarsson, G. O., 5156.

Asmar, M. F. El. See El Asmar, M. F.
Assarsson, G. O., Petersen, K., and Asklund, A. M.
Determination of gold in sulphide ores by extraction, 5156.

Asselbergs, C. J., Hengeveld, J. F., Poel, P. W. van der, and Waterman, H. I., with Saeys, H. W., and Kroeze, H. K. Apparatus for countercurrent extraction in the laboratory, 5488.

Association of American Soap & Glycerine Producers, Inc. Determination of orthophosphate, hydrolysable phosphate and total phosphate in surface waters, 778.

Astaf'ev, V. P. Determination of quartz and opal in rocks, 1037.

A.S.T.M. See American Society for Testing Materials. Astudillo, M. D., Sanz, F., Municio, A., and Fernandez, V. [Fifteenth Internation Congress of Pure and Applied Chemistry. Lisbon, 1956.] Determination of the different chemical forms of sulphur contained in ovomucin, 2031.

Asuncion-Omarrementeria, M. C. See Burriel-Marti, F., 2031. Aten, A. H. W., jun.

Activation analysis, 4106. Athavale, V. T., Mahajan, L. M., Thakoor, N. R., and Varde, M., S. Determination of microgram quantities of uranium in thorium, 2714. Determination of trace amounts of nickel in uranium, 3234.

Menon, V. P. M., and Venkateswarlu, C. Separation of niobium and tantalum together from titanium, 4743.

Oke, K. P., and Tillu, M. M. Determination of thorium in ores. III. Determination of microgram amounts of thorium in ilmenite sands, 3698.

Ramachandran, T. P., Tillu, M. M., and Vaidya, G. M. Spectrophotometric determination of microgram quantities of indium in uranium and thorium metals and their salts, 3671.

Atherton, N. See Bovey, L., 988.
Atkins, D. H. F., and Smales, A. A. Activation analysis, 858. Attrill, J. E. See Feldman, C., 3103.

Atwell, M. G., Pepper, C. E., and Stukenbroeker, G. L. Second Conference-Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] The spectrographic excitation of iron with iron-59, 335. Determination of individual rare-earthelements in product uranium, 335.

Aubertein, P. Application of a method for the measurement of solubility to the determination

of water in cyclohexanone, 5304.

and Pascal, H. Chemical determination of some explosives and explosive mixtures, 5335.

Aubry, J. See Marion, F., 2729. Auda, B. M. See Korzenovsky, M., 5391.

Ausch, K. S. See Somfalvy, E., 808.

Austin, E. See Hollinger, N. F., 1521.

Auterhoff, H., and Maiss, N. Determination of anthraquinones without expensive apparatus. XII. Anthraquinones, 2430.

Auvinen, E. M. See Favorskaya, I. A., 1054. Avery, M. E. See Chiccarelli, F. S., 712. Avni, R., and Alkemade, C. T. J. Organic solvents

in flame photometry, 5103.

Avril, P. See Pien, J., 4236.

Awapara, J., Davis, V. E., and Graham, O. Chromatographic methods for the identification of biogenic amines, 3898.

Ayers, B. O. See Claudy, H. N., 1217.

Ayers, C. W., Belcher, R., and West, T. S. Submicro-methods for the analysis of organic compounds. VI. The determination of carbon, 1398.

Ayres, G. H., and Alsop, J. H. Spectrophotometric determination of palladium^{II} with tin^{II}, 1029.

and Janota, H. F. Spectrophotometric determination of palladium with quinoxaline-2:3dithiol, 3273.

 See also Johnson, F. L., jun., 2520.
 Ayres, W. M., and Leonard, G. W. Polarographic determination of pentaerythritol trinitrate in the presence of nitroglycerin, 1840.

- and Whitnack, G. C. Polarographic determina-

tion of styrene monomer in polyester resins, 4887.

Azarova, L. G., and Khasina, T. V. Spectrographic determination of aluminium - manganese, aluminium - copper, and aluminium - beryllium alloys, 2646.

Azen, V. E., and Latyshov, V. A. Chromatograph,

Azim, A. A. A. See Issa, I. M., 1223.

Azim, S. M. A., and Rehman, A. H. Potentiometric studies in oxidation - reduction reactions. Iodimetric determination of reducing substances,

Baba, H. See Nozaki, Tadashi, 4702. Baba, S. See Nagase, Y., 3508. Babatschew, G. N. Methods for determining the

main elements in the concentrates and mother liquors in the manufacture of sea salt, 4295.

Babcan, J. Determination of bivalent iron in the presence of Mn₂O₂, Mn₃O₄ and MnO₂, 2727. Determination of manganese oxides of various valencies, 3244.

Babenko, A. S. Nitron hydrochloride as an extraction indicator in the titration of acids in coloured solutions, 1647. Titration of acids in coloured solutions, 2046.

Babenyshev, V. M., and Blesnova, A. I. Amperometric titration of magnesium with ammonium ferrocyanide, 3143.

Babkin, A. G. See Gorshchenko, Ya. G., 2699. Babko, A. K., and Get'man, T. E. Determination of chromium in metallic nickel by extraction of the sym.-diphenylcarbazide complex, 3221.

and Lutokhina, N. V. Colorimetric determination of magnesium in cast iron, 3259.

and Marchenko, P. V. Determination of micro amounts of impurities in zirconium by means of basic dyestuffs, 2138.

and Markova, L. V. Photometric determination of micro amounts of sulphides and sulphur in metals by catalysis of the iodine - azide reaction, 3215

and Shtokalo, M. L. Co-precipitation in quantitative analysis. Study of the growth of barium sulphate crystals, 1720.

Babson, A. L., and Read, P. A. Assay for prostatic acid phosphatase in serum, 2418.

Baccaredda, M., and Butta, E. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Determination of the branching degree in natural and artificial hydrocarbon mixtures by means of the ultrasonic velocity, 2031.

Bacchini, M. See Ghielmetti, G., 1544. Bacher, F. A. See Charnicki, W. F., 3484

Bächtold, H. See Feichtinger, H., 5118.

Bacila, M., and Villela, G. G. Method for the determination of xanthine oxidase activity using the oxygen electrode, 2916.

Backe-Hansen, K. See Svendsen, A. B., 2919. Bădănoiu, M., Fiti, M., and Măntescu, C. Analysis of chemically pure silicon by radioactivation,

Badische Anilin- & Soda-Fabrik A.-G. Improvements in the separation of mixtures in the presence of a carrier gas, 1984.

Badley, J. H., and Stross, F. H. [Progress in microchemistry]. Reduced-scale determination of physical constants, 2033.

Badrinas, A. Volumetric determination of sul-phates in waters, soil extracts and biological material, 3216.

Baeckmann, A. von. See Ziegler, M., 3714. Baehler, B., and Rabinowitz, J. Determination of nikethamide, 3968.

Baev, F. K. Polarographic determination of lead and thallium impurities when present together in zinc salts and zinc, 1286. Polarographic determination of tin in the presence of interfering Polarographic elements by using a bromide - chloride basal solution, 3186.

Bag, S. P. See Majumdar, A. K., 2725.

Baggett, W. L., and Huyck, H. P. Spectrochemical determination of vanadium in alkali brines, 1333.

Bagreev, V. V. See Savvin, S. B., 5200.
Bagshawe, B. Ferrous metallurgical analysis, 1349.
Bähr, A. See Dickens, P., 1755, 5174.

Baier, A. See Pfeil, E., 572.

Bailey, D., and Dowson, W. M. Qualitative inorganic analysis. XIV. Separation of the zinc-Separation of the zincgroup sulphides, 3602.

Bailey, J. M. Colorimetric micro-determination of sorbitol, mannitol and glycerol in biological fluids, 1485.

Baines, C. B., and Proctor, K. A. Gas chromatography in routine pharmaceutical analysis, 3461.

Bair, L. R. See Mason, L. H., 814. Baird, E. E. See Fossan, D. D. van, 1107. Baiulescu, G., and Turcu, L. Tartrazine, a selective reagent for zirconium, 1322.

— See also Popa, G., 421, 1030, 4205.

Bakács-Polgár, E. Volumetric determination of phosphate ions in the presence of calcium and other metal ions, 454.

Bakács-Polgár, E., and Szekeres, L. Precipitation method for the determination of phosphate and sulphate in the presence of each other, 89. Baker, B. B. See Thomas, C. O., 1585.

Baker, C. A. Application of time resolution to a spectrographic source, 828. Baker, E. A., and Skerrett, E. J. Determination of

dieldrin, 5057.

See also Skerrett, E. J., 793, 4538.
 Baker, H., Frank, O., Pasher, I., Dinnerstein, A., and Sobotka, H. Assay for pantothenic acid in biological fluids, 3884.

Herbert, V., Frank, O., Pasher, I., Hutner, S. H., Wasserman, L. R., and Sobotka, H. Micro-biological method for detecting folic acid deficiency in man, 1125.

Baker, M. R., and Vallee, B. L. Theory of spectral excitation in flames as a function of sample flow,

3571.

See also Fuwa, K., 3572.

Baker, P. T. See Yalman, R. G., 894. Baker, R. W. R., and Porcellati, G. Ion-exchange chromatography of nitrogen-containing phosphate esters from brain and spinal cord, 3897

— See also Magee, W. L., 4952.

Balabanoff, K. L. Determination of iron in oxides. I. Comparison and selection of methods, 523; II. Comparison and selection of iodimetric

methods, 2726.

Balázs, L. See Pungor, E., 4615.
Baldinus, J. G., and Rothberg, I. Potentiometric determination of acetophenetidin [phenacetin] in tablet mixtures, 1162.

Baldwin, W. H. See Higgins, C. E., 4344, 4345. Baliga, B. P., Bayliss, M. E., and Lyman, C. M. Determination of free lysine e-amino groups in cottonseed meals and relation to protein quality,

Balkrishnan, E. See Deshmukh, G. S., 3122. Ball, R. G., Manning, D. L., and Menis, O. Determination of mercury, copper and zinc by deriva-tive polarography. Application to solutions of uranyl sulphate containing corrosion products,

Balla, B., and Bene, T. Removal of cyanides from industrial wastes by chlorination. II. Analytical

methods, 1590.

Ballard, A. E. See Bush, D. G., 1273. Ballezo, H., and Hodos, M. Analytical chemistry of calcium fluoride, 895. Detection of sulphate in a drop by using a glass ring-oven, 4231.

Ballif, G. See Petraşcu, S., 5051.
Balloffet, G. See Romand, J., 1320.
Ballof, A. F. K. B. See Buys Ballot, A. F. K.
Balzer, O. See Pieil, E., 572.
Banasik, O. J., and Harris, R. H. Determination of extract in experimental malting barleys by new micro-mashing and falling-drop methods, 1571.

Bancie-Grillot, M. [Fifteenth International Congress of Paris and Applied Chemistry. Lisbon, 1956.] Radiochemical micro-determination of chlorine and silver in luminescent zinc and cadmium sulphides, 2031.

Bancroft, W. H., jun. Delay circuit for fraction collection of very volatile liquids, 1600.

Bandelin, F. J., and Tuschhoff, J. V. Paper chromatography of some certified dyes, 5322.

Bandi, W. R. See McDuffle, B., 1335.
Bane, R. W. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Analysis of reactor alloys, 335.

Banerjea, D., and Chakravarty, B. Amperometric determination of copper with mandelamidoxime, 3137. Amperometric determination of copper with salicylamidoxime, 3629.

See also Tripathi, K. K., 1341, 1765.

Banerjee, D. See Chaterjee, P. K., 5333.
Banerjee, D. K., Budke, C. C., and Miller, F. D.
Polarographic determination of titanium in
tantalum and niobium concentrates and ores, 2670.

Banerjee, G. See Heyn, A. H. A., 4761. Banerjee, N. G. See Santra, A. K., 1775. Banerjee, S. N. Volumetric estimation of thiourea in presence of mercuric chloride, 1425.

Bánhidi, Z. G. Agar-plate test for thiamine factors

with Lactobacillus fermenti 36, 3004.

Bankovskii, Yu. A., Ievin'sh, A. F., Liepinya, Z. E.,
Luksha, E. A., and Rengart, L. M. Analytical use of 8-mercaptoquinoline (thio-oxine) and its derivatives; XIII. Specific reaction for copper with thio-oxine disulphide (8:8'-diquinolyl disulphide), 3628.

- Ievin'sh, A. F., and Luksha, E. A. Analytical use of 8-mercaptoquinoline and its derivatives. IV. Photometric determination of small amounts of manganese, 514; VIII. Photometric determination of rhenium in the presence of molybdenum, tungsten and other elements, 3247; XII. Composition and structure of copper thiooxinate, 3628.

and Lobanova, E. F. Analytical use of 8mercaptoquinoline (thio-oxine) and its derivatives. VII. Internally complexed salts of halogenated 8-mercaptoquinoline and their solubility in organic solvents, 2595; XV. Specific copper flotation reaction with 6-chloro-8-mercaptoquinoline disulphide, 3138.

Banks, C. V., and Richard, J. J. Determination of

vic.-dioximes, 1415.
- and Smith, R. V. Spectrophotometric determination of palladium with 4-methylcyclohexane-1:2-dione dioxime, 2742.

and Yerick, R. E. Chelating properties of NNN'N'-tetrakis(phosphonomethyl) - 1:2 - diaminocyclohexane [cyclohexanediaminetetra-methylphosphonic acid, CDTMP], 10.

Banks, J. Absorptiometric determination of dis-

solved oxygen, 3529.

Banyai, É., B.-Gere, É., and Erdey, L. Complexometric determination of mercuric and aluminium ions, 5166.

Bapat, M. G. See Deshmukh, G. S., 3122.
Barakat, M. F. See El-Shamy, H. K., 2203.
Barakat, M. Z., and Abdalla, A. Titrimetric method

for determining arsenite in presence of arsenate, 5208.

Baran, H. See Kalinowski, K., 254. Barankina, E. P. "Separate exposures" method in the analysis of certain alloys, 3619.

Baranov, V. I., and Chen, Y .- V. Isolation of radiogenic calcium from mica for isotopic analysis,

Barasheva, T. V. See Sukhenko, K. A., 3754.
Barber, E. D., Fox, F. T., Lodge, J. P., and Marshall,
L. M. Organic acids in a selected dialysate of air particulate matter, 3527.

Barber, H. H., jun., and Clingman, W. H., jun. Determination of organic acids in solutions of chromic acid, 3314.

Barbier, M. Separation of naturally occurring p-benzoquinones by chromatoplates, 3417.

Jäger, H., Tobias, H., and Wyss, E. Application of thin-layer chromatography to steroids, 2410.

Barboni, J. See Duriez, V., 155. Bărbulescu, N. See Angelescu, E., 182.

Barceló, J. R. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Infra-red spectra of some metal chelate compounds. I. Rubeanates, 2031.

Barcia Goyanes, C. See Burriel-Martí, F., 400.
Barcza, L., and Körös, E. Determination of bismuth and bivalent heavy metals in the presence of each other, 3710.

and Schulek, E. Chemistry of selenium and selenium compounds. VI. Detection of small amounts of selenate with p-ethoxychrysoidine,

See also Körös, E., 2224, Přibil, R., 48, and

Schulek, E., 2709.

Bard, A. J. Multi-purpose electro-analytical instrument incorporating an X-Y recorder, 3090. and Lingane, J. J. Coulometric titration with electrogenerated tin¹¹. Determination of iodine. bromine and various oxidants via iodimetry, 511. Titration of gold^{III} and vanadium^V, 889.

Bardenheuer, F. See Ende, H. vom, 1768. Bardenshtein, S. B., Dzhagatspanyan, R. V., and Zetkin, V. I. Analysis of mixtures of trichlorobenzenes and mixtures of tetrachlorobenzenes by means of their infra-red absorption spectra,

Bardet, L. See Canals, E., 2031.

Bardhan, D. K., Bhattacharya, R. N., and Dutta, S. K. Physico-chemical method for estimation of thiamine, pyridoxine and nicotinamide in the presence of riboflavine and panthenol, 759.

Bardin, M. B., and Temyanko, V. S. Polarographic determination of gold on a rotating platinum micro-disc electrode, 3141.

Bare, M. See Altshuller, A. P., 3282.

Barendrecht, E. Automatically operating, coulometric titration method for continually measuring small amounts of water in fluids, 328. Coulometric titrations, 4616.

Baret, C. See Lefebvre, M., 2031.

Bargeton, D., Tricaud-Redel, M. E., and Gros, P. Determination of serum cholesterol, 5387.

Bargh. J. Micro-determination of dissolved oxygen in water, 3531.

Barilari, E. M., and Katz, M. Photometric determination of streptomycin and dihydrostreptomycin, 710.

Bark, L. S., Catterall, R., Meth-Cohn, O., and Suschitzky, H. Reagents for the colorimetric determination of nitrite, 5206.

and Graham, R. J. T. Additive effect of substituent groups on the chromatographic behaviour of phenoxyacetic acids, 1084.

See also Andrews, R., 98.

Barkemeyer, H., and Seehofer, F. Spectrophotometric determination of nicotine in tobacco and

in tobacco-smoke condensates, 4996.

Barker, E. R., Pepper, C. E., and Stukenbroeker, G. L. Second Conference-Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Spectrographic determination of impurities in uranium - molybdenum alloys, 335.

Barker, G. C., and Gardner, A. W. Pulse polarography, 406.

Barker, H. A., Smyth, R. D., Weissbach, H., Munch-Petersen, A., Toohey, J. I., Ladd, J. N., Volcani, B. E., and Wilson, R. M. Assay, purification and properties of the adenylcobamide coenzyme, 3941. Barker, M. G. See Burleigh, J. E., 2340.

Barker, S. A., Stacey, M., and Tipper, D. J. Polysaccharide analysis of liver biopsy specimens obtained at laparotomy, 1849.

Barkley, R. A., and Thompson, T. G. Determination of chemically combined iodine in sea water by amperometric and catalytic methods, 4518.

Barkovskii, V. F. Electrometric non-compensated

method of titration of beryllium, 3640.

Barnard, D., and Cole, E. R. Detection and estimation of thiosulphinates and thiosulphonates,

Barnes, L., jun., and Pawlak, M. S. Karl Fischer determination of water in vinyl ethers, 2766.

Barnes, W. J. See Parker, C. A., 3841.

Barney, J. E., II, Bergman, J. G., and Tuskan, W. G. Determination of phosphorus in motor oils and additives, 1444.

Baron, G., Favre, J., and Raimbaoult, C. Elementary analysis by X-ray fluorescence spectrography. II; III, 318.

 Baron, J. See Thiery, P., 1389.
 Barreira, F., and Laranjeira, M. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Analytical distinction between natural rubber and neoprene by neutron irradiation, 2031.

Barrionuevo, M. See Schwarz, H. P., 5364. Barros, M. I. de. See Almeida, L. de, 2031.

See Sawicki, E., 2301.

Barskaya, S. I. Photometric determination of niobium in alloys, 4742.

Barskii, I. Ya. Ultra-violet fluorescence of guanine on paper chromatograms and in solution, 2390.

Bartels, U., and Hoyme, H. Determination of phosphorus in organic compounds, 554. Doublebond determination in acrylic esters by complexometric titration, 1794. Complexometric finish to the determination of sulphur in organic substances after different methods of decomposition, 3293.

Bartkiewicz, S. A., and Robinson, J. W. Iodimetric determination of the reducing capacity of aluminium alkyls, 175.

Bartlet, J. C. See Smith, D. M., 5091. Bartlett, A. F. F. See Hands, G. C., 4509. Bartolomé, A. G. de. See Garrido de Bartolomé, A. Bartos, J. See Pesez, M., 4334.

Bartošová, Z. Determination of vanadium in urine, 4905.

Bartsch, R. C. See Darling, D. J., 4061.

Bartunek, R. Non-hydrolytic spectrophotometric method for determining lignin in high-purity pulps, 1832.

Bartušek, M. Iodimetric determination of hydroxylamine, 4729.

Basch, A. See Kabasakalian, P., 4971.
Bashilova, N. I., and Solotina, N. I. Quantitative determination of thallium as the dichromate. II. Determination of thallium in the presence of other elements, 2649.

Bashkirov, A. N., Lodzik, S. A., and Kamzolkin, V. V. Determination of higher primary and secondary alcohols by the dehydration method, 1410.

Bashkirtseva, A. A., and Yakimets, E. M. Complexometric determination of iron, 1001. Complexometric determination of aluminium, 3663.

Basińska, H., and Orylska, K. Volumetric determination of bismuth by means of potassium ferrocyanide in the presence of o-dianisidine, 2692.

and Orylski, Z. Potentiometric titration of bismuth with potassium ferrocyanide, 2693. Potentiometric titration of bismuth with sodium and lithium ferrocyanides, 5210.

Basińska, H. and Przybyszewska, K. Volumetric determination of thorium with potassium ferrocyanide in the presence of o-dianisidine, 4210. Volumetric method for determination of potassium ferrocyanide with o-dianisidine as an adsorption indicator, 4271.

Basiński, A., and Lango, M. Potentiometric titration of thorium ions with potassium ferro-

cyanide, 2679.

Bass, A. M., and Kessler, K. G. Large-aperture grating spectrograph utilising commercial camera components, 3562.

 Bass, E. A. See Steyermark, A., 3288, 4809.
 Bass, S. T., and Connor, J. Use of Pyroceram crucible vials in ashing biological materials for spectrochemical analysis, 4073. High-voltage spark-excitation spectrochemical analyses of plant material by changing electrode geometry and sample treatment, 4520.

See also Connor, J., 3564.

Bassett, J. G. Sampling liquid steel for hydrogen, 3256.

Bassette, R. See Keeney, M., 1917.
Bassham, J. A., Birt, L. M., Hems, R., and Loening, U. E. Determination of the reduced and oxidised pyridine nucleotides in animal tissues, 3446.

Basson, R. A., Wet, C. R. de, Nel, W., and Pretorius, V. Glow discharge detector for gas chromatography, 3051.

Bastianutti, I. See Romani, B., 2990. Bastien, P., and Colombié, M. Thermobalance for use under pressure, 3084

Batchelder, G. H. See Patchett, G. G., 4537. Bate, G. L., Potratz, H. A., and Huizenga, J. R. Determination of scandium, chromium and europium in stone meteorites by simultaneous

neutron activation analysis, 3776.

Bate, L. C. See Surak, J. G., 3737.

Batova, N. T. See Rusanov, A. K., 2622.

Batts, M. M. See Fischer, R. B., 1196.

Battis, E. F. [Second Conference—Analytical Chemistry in Nuclear Reactor Technolgy. Part 2. Instrumentation, remote-control techniques and surface in the control of th niques and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Operating experiences with oxide monitors for sodium systems, 3103.

Batyr, D. G. See Ablov, A. V., 4331.
Baudequin, P. See Cartier, P., 1112.
Baudin, G., and Ernoult, J. Spectrographic determination of silicon in uranium - silicon alloys,

Bauer, H. H. Alternating-current polarographic analysis by harmonic measurements, 4606.

Bauer, W. H. See Wiberley, S. E., 4349. Bauld, W. S. See Goldzieher, J. W., 5104. Baulieu, E. E. See Weinmann, S. H., 3452.

Baum, E. H. Automatic analyser for continuous detection of sugar in evaporator condenser water, 3534.

Bauman, R. P. Least-squares method for multicomponent analyses, 3599.

Baumann, G. F., and Steingiser, S. Colorimetric differentiation of polyester- and polyether-based urethane polymers, 624.

Baumgarten, S., Cover, R. E., Holsass, H., Karp, S., Pinches, P. B., and Meites, L. Half-wave poten-tials of metal ions in organic hydroxy acid supporting electrolytes. 11, 20.

Baumgartner, W. E., Lazer, L. S., Dalziel, A. M., Cardinal, E. V., and Varner, E. L. Determination of gibberellins by derivative labelling with [14C]diazomethane and by isotopic dilution analysis with tritium-labelled gibberellins, 1495.

Baun, W. L. Identification of crystalline ferrocenes by X-ray diffraction, 1439.

Bausch, H., Wolter, H., and Sommer, D. Chromatographic - polarimetric determination of the α-bitter acids content of hops, 3999.

Bausova, N. V. Determination of aluminium in aluminium bronze, 3666.

Bavin, P. M. G. Characterisation of alkyl halides, 4820.

Baxter, R. A. Analysis of diphenyl - terphenyl organic coolant mixtures by gas chromatography, 2791

and Keen, R. T. High-temperature gas chromatography of aromatic hydrocarbons: instrument design and exploratory studies at temperatures up to 430°, 1429.

Baye, L. J. See Wilson, R. F., 2741. Bayer, E. Selectivity of the liquid phase in gas chromatography and the choice of supporting medium, 817.

and Anders, F. Biological objects as detectors in gas chromatography, 1615.

and Möllinger, H. Micro-determination, selective separation and concentration of uranium, using Schiff's bases, 1731.

Bayhurst, B. P., and Prestwood, R. J. Method for estimating beta-counting efficiencies, 331.

Baykut, F., and Bolayir, S. Paper-chromatographic analysis. I. Separation of a-hydroxy-a-methyl fatty acids, 583.

and Özeris, S. Paper-chromatographic analysis. Separation of the 2:4-dinitrophenylhydrazones of symmetrical dialkyl ketones, 583.

Bayliss, M. E. See Baliga, B. P., 3537.
Bazinet, M. L. See Merritt, C., jun., 3502.
Bazzi, B. Determination of residues of OOdimethyl S-methylcarbamoylmethyl phosphorodithioate [Rogor] in olives and various vegetable materials, 5480.

Beach, A. L., and Guldner, W. G. Effect of evaporated films on recovery of gases evolved during vacuum fusion analyses, 2576.

See Whitehead, J. K., 1507.

Beale, P. T. Analysis of zinc-, lead- and copper-base alloys, 1657.

Beamer, W. H. See Gray, P. R., 3299. Beamish, F. E. Spectrographic, fluorescence X-ray, and polarographic methods for the determination

of the platinum metals, 1377.

and Page, J. A. [Review of fundamental developments in analysis.] Volumetric and gravimetric analytical methods for inorganic compounds, 5125.

See also Kavanagh, J. M., 4797, Plummer, M. E. V., 1032, Tertipis, G. G., 4795, and Zachariasen, H., 4792.

Bean, R. C., and Porter, G. G. Detection and differentiation of sugars and polyols on single paper-chromatograms, 2768.

Bear, J. L. See Wendlandt, W. W., 3174. Beati, M. See Scala, E., 1847.

Beaven, G. H., and Gratzer, W. B. Direct spectroscopic examination of electrophoretic zones in agar gel, 1616.

Becherer, R. Spectrograph for nuclear magnetic resonance, 4625

Beck, A. See Kertes, A. S., 4112. Beck, G., and Berli, W. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Nephelometric determination of calcium and magnesium in serum with sodium naphthal hydroxamate, 2031

Beck, H. See Simmer, H., 4914.

Beck, M. See Görög, S., 521.

Becker, A. Elatography. A special form of paper chromatography, 5492.

Becker, H. See Guttmann, W., 5099.

Becker, I. AZP (automatic Carl Zeiss 0.05 S Becker, I. sensitivity saccharimeter) in the sugar industry, 3578.

Beckett, A. H., Patki, S. J., and Robinson, A. E. Determination of low concentrations of some antibacterial substances in solutions after contact with bacteria, 729.

Beckey, H. D. Mass spectra with the aid of a field-emission ion-source, 3591.

Beckman, H. F., and Feldman, L. S. Colorimetric determination of cadmium anthranilate in feeding-

Beckman Instruments, Inc. Electrochemical device

for chemical analysis, 4609.

Becquerel, G. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956. Determination of uranium, radium, thorium and actinium in fine particles of radioactive ores, 2031.

Bedford, C., Child, K. J., and Tomich, E. G. Spectrophotofluorimetric assay of griseofulvin, 1483. Beerh, O. P., and Siddappa, G. S. Paper-chromato-

graphic method for the detection of adulteration of tomato ketchup with sweet potato, 1919.

Beerthuis, R. K., and Recourt, J. H. Sterol analysis by gas chromatography, 5386.

Beevers, J. R., and Breyer, B. Estimation of

titanium by a.c. polarography, 1700.

Begemann, P. H., and Jong, K. de. Analytical applications of a Celite - dinitrophenylhydrazine column, 295.

Béguin, E. See Häberli, E., 3965.
Behnke, F. See Alpert, N. L., 3072.
Beinroth, G. See Plathe, R., 3261.
Beitchman, B. D. Infra-red spectra of asphalts, 2326.

Beitsch, N. See Sass, S., 3289, 4342.

Bekleshova, G. E. See Usatenko, Yu. I., 535, 3825. Belcher, R. [International Symposium on Micro-chemistry. Birmingham, 1958.] British contributions to the progress of microchemistry,

Berger, J., and West, T. S. Sub-micro methods for the analysis of organic compounds. VIII. Factors associated with sub-micro titration in

glacial acetic acid, 2287.

Bhasin, R. L., and West, T. S. Sub-micro methods for the analysis of organic compounds. VII. The determination of nitrogen in heterocyclic compounds and azo, hydrazo and nitro compounds, and in the presence of other elements. 1402

Leonard, M. A., and West, T. S. Sub-micro methods for the analysis of organic compounds. Determination of fluorine, 3287.

Ottendorfer, L., and West, T. S. Acid chlorides of substituted succinic and glutaric acids as hydrolytic reagents for the determination of water, 5144.

- Rees, D. I., and Stephen, W. I. N-Phenyl-anthranilic acid as a redox indicator, 2600. NNN'N'-Tetracarboxymethyl derivatives of some benzidines as metallofluorescent indicators, 4633.

- and **Stephen**, **W. I.** Studies in qualitative inorganic analysis. X. Separation and identifica-Separation and identification of the halides and thiocyanate, 123. See also Ayers, C. W., 1398.

Belikov, V. G. Colour reaction for thiosemicarbazide with sodium nitroprusside, 2299.

Belko, J. S. See Larkey, B. J., 4964. Bell, A. See Nordin, B. E. C., 3389.

Bell, E. A. Determination of canavanine in the Leguminosae, 4432.

Bell. F. K. Digitalis. X. The infra-red absorption spectra of some digitalis glycosides and aglycones, 5410.

Bell, J. D. See Cannon, M. R., 5071. Bell, R. P. See Irving, H., 2031.

Bellamy, L. J., and Williams, R. L. [International Symposium on Microchemistry. Birmingham, 1958.] Current trends in infra-red structural diagnosis, 3102.

Bellobono, I. R. Chromatographic determination of metallic impurities (copper, iron, nickel, cobalt) in zinc and zinc salts, 4682.

Bellomonte, G., Calò, A., and Cardini, C. Analytical characteristics of some long-acting sulphonamides, 5419

- and Davidova, A. Ionophoretic separation and determination of mixtures of salicylic acid and 2-phenylquinoline-4-carboxylic acid (cinchophen), 1165.

Bellucci, G. See Porretta, A., 1558.

Belobragina, M. V. See Sergeev, E. A., 3274. Bělohlávek, O. Spectrographic determination of

aluminium in Nimonic alloy, 2644.

Beloian, A. See Lichtenstein, H., 3526.

Belokrinitskaya, E. E., Bondarenko, V. V., Vitushkina, I. N., Gerasimova, M. S., Ginzburg, V. L., Gramenitskii, I. N., Livshits, D. M., and Kryzhnaya, V. F. Spectrographic analysis of cobalt for

metallic impurities, with cast electrodes, 1373.

Belonongova, V. A. See Rabovskii, G. V., 2694.

Belyakov, A. A. Determination of microgram amounts of nickel, nickel tetracarbonyl and decomposition products of the tetracarbonyl in air, 4510.

Belyakov, L. V., Voitsekhovskaya, I. A., and Rekalova, G. I. Infra-red spectrograph, 5108

Benach, M. G. See Gispert Benach, M. Benakis, A., and Glasson, B. Windowless gas-flow Geiger counter for the measurement of the radioactivity of chromatograms, 3098.

Benassi, C. A. See Coppini, D., 1506.
Benassi, R. See Olivari, L., 5474.
Ben-Bassat, A. H. I. See Bobtelsky, M., 3251.
Benck, R. F. See Nightingale, E. R., jun., 4785.
Bender, A. E., Palgrave, J. A., and Doell, B. H.
Collaborative test of Moore and Stein's resinchlassest contractions. chromatographic method for determining amino acids, 1860.

Bender, S. L. See Natelson, S., 4901.
Bendt, W., and Šára, J. Complexometric determination of copper in the presence of amino compounds, 2625.

Bene, T. See Balla, B., 1590.

Beneden, G. van. Ameno acids for control of the functioning of biological purification of sewage waters, 3009.

 See also Leclerc, E., 4023.
 Benedetti-Pichler, A. A. [Progress in microchemistry.] Qualitative inorganic analysis, 2033. International Symposium on Microchemistry. Birmingham, 1958.] Trends in qualitative analysis, 3102.

Benford, C. L. See Crisler, R. O., 1810. Benišek, L., and Galle, A. Colorimetric determina-

tion of anionic detergents, 4870. Benk, E. Determination of the chloramine value

of fruit juices and preparations thereof, 5439. Benkő, I., and Kulcsár, M. Spectrochemical determination of arsenic, 3705.

Bennett, H. See Thompson, H. V., 1674. Bennett, L. See Fristrom, G. R., 2089.

Bennett, R. L., and Smith, H. A. Spectrophotometric determination of tin with phenylfluorone,

Bennett, W. J. See Burley, R. A., 3381.
Bennewitz, R. Combustion of liquids by the Schöniger technique, 3784.

and Tänzer, I. Complexometric determination of phosphate in conjunction with the Schöniger combustion procedure, 2163.

Bens, E. M., and McBride, W. R. Preparative aspects of gas - liquid chromatographic separation. Quantitative determination of tetra-alkyltetrazenes, 1442.

Bentley, F. F., and Wolfarth, E. F. applications of far-infra-red spectra. II. Spectrastructure correlations for aliphatic and aromatic hydrocarbons in the caesium bromide region, 567.

Bentley, R., and D. S. Bhate. Mutarotase from Penicillium notatum. I. Purification, assay, and general properties of the enzyme, 5396.

Benzole Producers, Ltd. Identifying constituents of liquid mixtures, 1609.

Berbalk, H. Simple device for R_F determination 809. Electrophoresis. IV. Paper electrophoresis of aliphatic aldehydes, 1065; V. Paper electrophoresis of mono- and polyhydric alcohols, 1080

and Szabolcs, I. Electrophoresis. VI. Paper electrophoresis of phenols, 5299.

Berbenni, P. Determination of total carbon dioxide in water with complexones, 5477

Berezin, I. V., Kazanskaya, N. F., and Meluzova, G. B. Infra-red absorption method for the determination of cyclohexanone and cyclohexanol in cyclohexane oxidation products, 1083.

Berg, C. F. See Stone, L. R., 1967.
Berg, H.-W. See Brieskorn, C. H., 227.
Berger, E. Y. See Kanzaki, G., 1455.
Berger, J. See Belcher, R., 2287, and Ilver, K., 1907.
Berger, J.-A., and Dauphin, J. Determination of free and combined hydrogen sulphide in aqueous solutions of alkaline sulphides, 957.

See also Dorier, C., 1157.

Berger, W., and Elvers, H. Qualitative analysis of cations by the use of metal indicators. II. Incations by the use vestigations with 1-(2-pyridylazo)-2-naphthol as a (PAN), 3114. 1-(2-Pyridylazo)-2-naphthol as a photometric reagent. Determination of zinc and

— See also Hauser, W., 1542.

Berges, L. S. See Serrano Berges, L.

Berggren, A. See Björling, C. O., 718.

Bergman, J. G. See Barney, J. E., II, 1444.

Bergmann, G. Instrument technology for infra-red spectroscopy, 3071.

— See also Jentzsch, D., 3047.

Bergner, K. G., and Meyer, H. Paper-chromatographic separation and determination of glycerol in wines and liqueurs, 4488.

and Petri, H. R. Amino acids of spirit vinegar. I. Detection of amino acids in spirit vinegar and in vinegar bacteria, 5433; II. Quantitative determination of amino acids; differentiation of fermentation and synthetic vinegar, 5024.

Bergquist, L. M. See Searcy, R. L., 4972. Bergstresser, K. S. Spectrophotometric determination of niobium in tantalum, 2698.

and Smith, M. E. Determination of thorium in

plutonium - thorium alloys, 2155.

Berka, A. Volumetric methods for the analysis of organic substances. VI. Oxidation of mandelic acid with lead tetra-acetate and potassium periodate, 2798. Detection of periodate in the presence of iodate, 5243.

Berka, A., and Zýka, J. Reductimetric determination of copper in some pharmaceutical preparations, 2957.

Berkowitz, J. See Weissman, M., 1481.
Berl, W. G. See Fristrom, G. R., 2089.
Berli, W. See Beck, G., 2031.
Berlin, A. M. See Eremenko, K. F., 1102.
Berman, S. S., and Goodhue, E. C. Spectrophotometric procedure for platinum with tin¹¹ chloride,

Bermejo Martinez, F., and Paz Castro, M. Analytical applications of complexones agents. XVIII. Spectrophotometric and absorptiometric microdetermination of copper with AEGT [1:2-di-(2-aminoethoxy)ethane-NNN'N'-tetra-acetic acid], 1667; XIX. Spectrophotometric and absorptiometric micro-determination of cobalt with 1:2-di-(2-aminoethoxy)ethane-NNN'N'-tetra-acetic acid, 2236; XX. Spectrophotometric and absorptiometric micro-determination of vanadium with 1:2di - (2-aminoethoxy)ethane - NNN'N'-tetra - acetic acid. 3711.

Paz Castro, M., and Rey Mendoza, R. Analytical applications of complexones. XXVI. Application of AEGT and ADCT to the volumetric microdetermination of the sum of metal cations, 4649.

and Prieto Bouza, A. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Analytical applications of the complexones. VI. Spectrophotometric determina-

tion of vanadium, 2031.

and **Rey Mendoza**, R. Analytical applications of complexones. VIII. Absorptiometric and spectrophotometric micro-determination of iron with 1:2diaminocyclohexane-NNN'N'-tetra-acetic 5245; IX. Absorptiometric and spectrophotometric micro-determination of copper with 1:2 diaminocyclohexane - NNN'N' - tetra - acetic acid. 5151; X. Iodimetric determination of iron II in the presence of 1:2-diaminocyclohexane-NNN'N'tetra-acetic acid. 5245: XI. The action of oxidising agents on EDTA and the possibility of its potentiometric evaluation, 5133; XVII. Murexide as indicator in the volumetric macro- and microdetermination of copper with 1:2-diaminocyclohexane-NNN'N'-tetra-acetic acid, 373, 1667.

Bernanose, A., and Comte, M. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Application to analysis of phos-

phorescent papers, 2031.

Berndt, W. See Sára, J., 3377.
Bernfeld, P. See Miller, E. E., 2398.
Bernhard, R. A. Effect of flow-rate and sample size on column efficiency in gas - liquid chromato-

graphy, 4058.

Bernhart, D. N., and Chess, W. B. Quantitative evaluation of paper chromatograms of condensed phosphate mixtures using modified solvents and a densitometer, 87.

— See also Chess, W. B., 88.

Bernhauer, K. See Pawelkiewicz, J., 5463.

Bernstein, R. E. Internal standardisation with lithium: its use in flame photometry for biological specimens, 634.

Bernzott, H. See VEB Leuna-Werke "Walter Ulbricht", 2331.

Berret, R. Micro-titration apparatus and its applications, 5066.

Berry, H. K. Procedures for testing urine specimens dried on filter-paper, 4924.

Bersier, J. See Bersier, P., 2185.
Bersier, P., Bersier, J., and Hügli, F. Membrane electrode. II. The use of "membrane voltammetry" for the precipitation titration of sulphate, 2185.

Berstermann, W. See Brandt, A., 1755. Berther, C., Kreis, K., and Buchmann, O. Quantitative determination of cyanohydrins, 2294.

Bertin, D. See Herbain, M., 1119, 1227.

Berting, L. See Böhme, H., 183.

Berton, A. Determination of gas and water vapour by galvanic micro-piles, 2610. Galvanic cells sensitive to traces of gaseous, liquid or solid substances, 3085.

Bertrand, P. See Godfrain, J. C., 2456. Bespalova, L. L. See Vladýrchik, O. S., 2303, 3341.

Bethea, R. M., and Smutz, M. Gas chromatography. Effect of sample size on height of equivalent theoretical plate and retention volume, 1201.

and Wheelock, T. D. Gas chromatography of the C₁ to C₄ nitroparaffins, 2778. **Betheil, J. J.** Fluorimetric micro-determination of

human serum albumin, 4959.

Bethge, P. O. Determination of pentosans. Bromatometric determination of furfuraldehyde, 2808; IV. Bromatometric method for the determination of furfuraldehyde and 5-hydroxymethylfurfuraldehyde in Tollens distillates,

and Troëng, T. Determination of chlorine in

wood, pulp and paper, 3373.

— See also Aeschlimann, F., 3829. Betker, W. R. See Kane, P. F., 4534.

Beukelman, T. E., and Lord, S. S., jun. Standard addition technique in flame spectrometry, 4577. Beutler, E., and Yeh, M. K. Y. Determination of

Beveridge, J. M. R. See Kuksis, A., 4438.

Beyer, W. W., Lewis, J. N., and Stukenbroeker, G. L.

[Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part 2. Instru-mentation. remote-control techniques and mentation, and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Determination of uranium-235 by neutron activation using a radium - beryllium source, 3103.

Beynon, J. H., and Williams, A. E. Mass spectra

of alkylindoles, 2317

Beyrard-Benchemoul, N. R. See Van Oss, C. J.,

Bezler, F. I. See Podgornÿi, L. N., 1187. Bezuglÿi, V. D., Dmitrieva, V. N., Tarasyok, T. S., Polyakov, V. P., and Izmailov, N. A. graphic determination of glyoxylic acid, 5282. See also Dmitrieva, V. N., 1098.

B.-Gere, É. See Erdey, L., 1649, 3604, and Bányai,

E., 5166.

Bhalerao, V. R., and Kummerow, F. A. Paper chromatography of 2:4-dinitrophenylhydrazones of saturated aliphatic aldehydes, 2773.

Bhasin, R. L. See Belcher, R., 1402.

Bhat, A. N., and Jain, D. Separation and determination of uranium and thorium with 3-acetyl-4hydroxycoumarin, 4764. Oxine N-oxide as an analytical reagent for uranium, 5129.

Bhate, D. S. See Bentley, R., 5396.

Bhattacharya, K. R. Paper-chromatographic determination of arginine by the Sakaguchi reaction, 1137

Datta, J., and Roy, D. K. Application of Sakaguchi reaction to the quantitative estimation of arginine: a method involving paper chromatography, 3430.

Bhattacharya, R. N. See Bardhan, D. K., 759. Bhattacharya, S. C. See Tandon, S. G., 4291. Bhattacharya, S. K. Amperometric determination

of mercapto content of blood and tissues, 646. Bhattacharyya, A., and Mukherjee, J. Estimation of zinc oxide in zinc oxide plasters, 1557.

Bhuchar, V. M. See Verma, M. R., 958, 965. Bianchi, G., and Lomuto, E. Microbiological and spectrophotometric determination of orotic acid in pharmaceutical preparations, 714.

Biber, H. E., and Levy, S. Characteristics of a combination discharge and its applicability in spectrochemical analysis of metals, 309.

Spectrochemical analysis of metals, 30%.

Bickford, W. G. See McCutchon, M. A., 1577, and
Ory, R. L., 1576.

Bičovská, P. See Bičovský, K., 2786.

Bičovský, K., and Bičovská, P. Determination of
xanthates and sodium diethyldithiocarbamate by extraction, 2786.

Bieber, B., Vejmělek, B., and Večeřa, Z. Determination of carbon and sulphur in steel and cast iron by high-frequency combustion, 1758.

Biedebach, F., and Manns, G. Determination of diphenylhydantoin (phenytoin) in tablets, 3964.

Bierlein, T. K., Kendall, L. F., and Van Tuyl, H. H.
Analytical procedures for the plutonium metal
fabrication process. VI. The copper spark fabrication process. VI. The copper spark method, 2214; VII. Cupferron extraction - copper spark method, 2214.

Biers, S. H. See Stevenson, G. W., 3320. Bieth, R., Rebel, G., and Mandel, P. Quantitative separation of sphingomyelins. Application to the study of the renewal of sphingomyelin in vivo,

Biffoli, R. Colorimetric determination of added sucrose in milk, 735. Complexometric titration of calcium in wine, 748. Determination of neostigmine in pharmaceutical preparations, 2950. Colour reaction between vitamin A and sulphuric acid, 3001.

Bigeard, F. See Kerny, P., 1897. Bigg, P. H. Weight-in-air basis of adjustment of precision weights, 2509.

Bighi, C., Trabanelli, G., and Pancaldi, G. Chro-matographic and polarographic researches on mixtures of higher polythionates, 473.

Bilberg, E., and Landmark, P. Determination of inorganic polysulphides, 3214.

Billeter, E. See Planta, C. von, 1082.
Billingham, E. J., jun. See Jordan, J., 1629.
Billon, J.-P. See Kerny, P., 1897.
Bills, K. M. Spectrographic determination of residual elements in steel by the excitation index technique, 4275.

Bingham, E. W. See Zittle, C. A., 4849.

Binkley, F., and Torres, C. Spectrophotometric

assay of peptidase activity, 4982.

Binnerts, W. T. Determination of zinc with zincon and the protecting action of polyphosphates in the determination of trace elements, 3646. Method for the examination of feed mixtures containing added copper and zinc, 4527.

Bird, L. L. See Ziegler, C. A., 3067. Birenberg, I. É. See Kravchenko, V. S., 3297. Birkeland, J. W., and Shaw, J. H. Nitrous oxide in ground-level air, 772

Birkofer, L., and Leithäuser-Weitecki, G. Paperchromatographic separation of phenazine derivatives, 3831.

Birmingham, M. K. Porter - Silber and Schiff's reagents as spot tests for steroids applied on paper and their application to the study of rat adrenal lipids, 2904.

Biró, A. Paper chromatography by means of a "line oven," 1992.

Birt, L. M. See Bassham, J. A., 3446.

Biryuk, E. A., and Nazarenko, V. A. Trihydroxyfluorone derivatives in photometric analysis. Determination of scandium, 418.

Biserte, G., Holleman, J. W., Holleman-Dehove, J., and Sautière, P. Paper chromatography of

dinitrophenylamino acids, 673.

Plaquet-Schoonaërt, T., Boulanger, P., and Paysant, P. Separation of amino acids from complex biological media. V. Description of a combination of chromatographic and electrophoretic methods, 3901.

— See also Montreuil, J., 2899.

Bishop, C. T., and Cooper, F. P. Separation of carbohydrate derivatives by gas - liquid partition

chromatography, 4413.

Bishop, E. High-precision titrimetry. examination of the attainable precision, 7; II. A system of weight titrimetric analysis using arbitrary standards, 796. Analytical chemistry. II. Discriminants in ion combination reaction calculations, 3598; III. Importance of the ionisation of the weak acid or base in buffer media calculations, 3598; IV. A method of calculating asymmetrical titration curves avoiding the use of cubic equations, 4100; V. Method of calculating acid - base titration errors, 4636.

Bishop, J. A. Pyromellitein indicators. I. Acidbase indicators containing four condensed phenolic groups, 4096; II. Adsorption indicators, 4632.

B.I.S.R.A. See British Iron and Steel Research Association.

Bissett, F., Bluhm, A. L., and Long, L., jun. Micro and semi-micro pelleting technique for infra-red spectroscopy, 3074.

Bissing, D. E. See Choguill, H. S., 4845. Bitovt, Z. A. See Pesis, A. S., 5256. Björk, W. Double-fronting phenomenon in onestep development chromatography on anion exchangers, 2522.

Björling, C. O., Berggren, A., and Willman-Johnson, B. Determination of barbituric acid derivatives as mercury complexes, 718.

Black, P. J., and Forsyth, J. B. Scintillation counters in single crystal X-ray diffractometry,

Black, R. H. See Lemieux, P. E., 4258. Blackie, M. S., and Gold, V. Magnetometric titration,

Blackwell, I. G. See Haslam, J., 4024.

Bladh, E. See Karrman, K. J., 874, 875. Blaedel, W. J., and Olsen, E. D. Equipment for handling millicurie amounts of radio-isotopes,

Blair, B. See Salo, T., 3916.

Blake, B. H. See Erley, D. S., 4586. Blake, G. G. Electrostatic discharge methods of zone location for paper chromatographs. IV. Rapid approximate estimations of zone content by static discharge currents, 4054; V. A chromatographic humidiser, 4054.

Blake, M. I. Quantitative determination of free menthol in peppermint oil, 4874.

See also Vincent, M. C., 1161

Blakemore, L. C., and Fitzpatrick, M. Filtering solutions for flame-photometric analysis, 1571.

Blanariu, D. See Mageru, V., 4512. Blanc, A., Roux, G., Mouret, P., and Pottier, P. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Continuous control of fixation and elution of uranium in ion exchangers by the a-radioactivity of the effluents,

Blanchard, F. A. See Sterling, G. B., 2352. Blanchard, R. L., and Leddicotte, G. W. Determina-tion of trace elements in water by neutron activation analysis, 1587.

Blanquet, P. Colorimetric method for the deterdetermination of uranium, 974. Spectrophotometric determination of vanadium in all materials.

Blanzat, A. Apparatus for the determination of moisture by entrainment in xylene or toluene, 592.

Blasius, E., and Burmeister, W. Wackenroder reaction by means of radiometric paper-chromatographic methods, 467.

Blasko, E. See Maurer, W., 3984. Blass, J., Sarraff, A., and Nicolas, M. B. Analysis of biological amines by the techniques of chromato-ionophoresis, electrophoresis and paper chromatography, 4418.

Blaszkowicz, J., Roczniakowa, K., Wańtuch, S., and **Bukala, M.** Analytical methods in the camphor industry. I. Rapid method for the determination of camphene, 2840; II. Rapid method for the determination of isoborneol, 2840.

Blesnova, A. I. See Babenyshev, V. M., 3143.

Bligh, E. G., and Dyer, W. J. Method of total lipid

extraction and purification, 1852.

Blinn, R. C. Sodium biphenyl determination of micro quantities of organic chlorine, 4315.

Blitek, D., Strzyga, K., and Wardyńska, H. Detection of some vitamins of the B group by paper chromatography, 3003.

Block, G. E. See Porter, C. W., 2412.

Blöckinger, G. Determination of polysulphide

sulphur in solutions of barium polysulphide and the evaluation of the dependence on time of the formation of the maximum quantity of polysulphide sulphur, 4229.

Bloemendal, H. Starch electrophoresis. II. Starch column electrophoresis, 4070.

and Bosch, L. Cutting device for starch-block electrophoresis, 1617.

Blom, L., and Caris, J. Quantitative paper chromatography based on the sub-micro titration of derivatives containing nitro groups, 3040.

Bluhm, A. L. See Bissett, F., 3074.
Blumenthal, A. Ascending paper-strip chromatography, 299. Detection of vegetable thickening agents and polyphosphates, especially in mayonnaise, 740.

Blyholder, G. Integrating counter cell for use with vapour-phase chromatography, 5094.

Boari, A. Chromatographic determination polyoxyethylene glycol esters in bread and cakes, 2973.

Bobák, A. See Šingliar, M., 5266. Bobalek, E. G. See Chiang, M.-T., 2854. Bobovich, Ya. S. See Pivovarov, L. A., 5508.

Bobtelsky, M. [International Symposium on Micro-chemistry. Birmingham, 1958.] Micro-heterometric analysis and the study of chemical reactions

by micro-heterometry, 3102.

and Ben-Bassat, A. H. I. Heterometric micro-determination of trace amounts of iron in thiocyanate solutions by titration with nitron, 3251. and Carmon, B. Micro-heterometric determination of bismuth by titration with thiocarbanilide (sym.-diphenylthiourea). A study of the reaction and the compounds, 3708.

- and Cohen, M. M. Reactions between alkaloids

and bismuth iodide. The compounds formed and their analytical application, 4991. between alkaloids and tetraphenylboron and their analytical application. A heterometric study,

and Eisenstadter, J. Heterometric micro-determination of traces of palladium in metals with nitron, 159.

Bocheńska, J. See Rokosz, A., 893.
Bochkarev, V. V. See Korenman, I. M., 915.
Bochkova, O. P., Razumovskaya, L. P., Frish, S. E., and Chernysheva, N. V. Method for the spectral analysis of inert gases for impurities, 2058.

Bock, R. M. See Siegel, J. M., 223. Bockman, C. D. See Fernandez, J. E., 4333.

Bode, H., and Fabian, H. Flame-photometric

determination of gallium, indium and thallium,

and Hettwer, E. Co-precipitation of impurities in the precipitation of tellurium with sulphur dioxide from hydrochloric acid solution, 4754.

and Neumann, F. Di-substituted dithiocarba-VII. Stability of diethyldithiocarbamic acids when carbon tetrachloride and chloroform solutions of the diethylammonium diethyldithiocarbamates are shaken with aqueous mineral acids, 2596; VIII. Extractions with diethylammonium diethyldithiocarbamate solutions in organic solvents, 3614.

Bode, J. D. See Pasztor, L., 4277. Bödi, E. M. See Gréger, K. M., 4386. Boef, G. den, Boef-Nugteren, J. den, and Laar, B. van. Application of potassium manganate to quantitative analysis. II. The determination of arsenicIII and telluriumIV, 91.

and **Daalder**, A. Potassium manganate in quantitative analysis. III. Determination of antimony^{III}, 456; IV. Determination of

chromiumIII, 4241.

Boef-Nugteren, J. den. See Boef, G. den, 91. Boelsma-van Houte, E. See Böttcher, C. J. F.,

Boetzelaer, G. L. van. See Zondag, H. A., 3919.
Bogdan, E., Motas, M., and Giurgiu, D. Semimicro gravimetric method for the determination of cobalt in complex compounds by decomposition with hydrogen peroxide in alkaline medium, 5251.

Bogdanova, I. V. Determination of the gypsum content of cement by means of cationite, 1043.

— See also Prokof'ev, V. K., 1252.

Bogdanova, V. A. Fluorimetric determination of

4-pyridoxic acid in urine, 4409.

Bogdanova, V. I. Chromatographic separation of titanium from niobium and tantalum, 5190.

Bogdański, K. A. Vitamin-C assay in biological and food products, 1583.

Bognár, J. Analytical chemical studies in ultraviolet light. II. Some new fluorescent adsorption indicators, 6; III. Action of fluorescent adsorption indicators, 1242.

- and Nagy, L. Determination of fluorine in cryolite and aluminium fluoride, 125. Indirect argentimetric and mercurimetric determination of the fluoride ion with potentiometric or redox end-point indication, 2218.

Boguth, W., and Horn, V. Photometric determina-tion of phosphorus in serum by means of the

molybdovanadate method, 5350. Böhm, Z. Analogue integrator for gas-chromatography apparatus, 5096.

Böhme, H., and Bertling, L. Detection of sorbic acid, 183.

and Hocke, H. Determination of the alcohol content of galenical preparations by observation of the boiling temperature, 2961. Behaviour of alkaloid salt solutions on aluminium oxide VIII. Chromatographic determination columns. of the purity of dihydromorphinone hydrochloride, dihydrocodeine hydrogen tartrate, dihydrocodeinone hydrogen tartrate and codeine phosphate, 4992.

Bohn, K. Ion-exchange method for determining total acid contents in sugar beets and sugarfactory juices, 3500.

Bohnes, H. See Eberius, E., 1237. Bolchinova, E. S., and Aleskovskii, V. B. Quantitative determination of trace elements by the peak heights on paper chromatograms. mination of copper and nickel ions, 886.

Bolayir, S. See Baykut, F., 583.

Bolognani, L., Coppi, G., and Zambotti, V. Determination of hexosamines in tissue, 660.

Bolton, W. Determination of digestible carbo-

hydrates in poultry foods, 5050.

Boltz, D. F. See M. llon, M. G., 5125.

Bonati, B. See Rancati, G., 2915.

Bondar', V. V. See Shafershtein, I. Ya., 452.

Bondarenko, V. V. See Belokrinitskaya, E. E.,

1373

Bondarevskaya, E. A., Syavtsillo, S. V., and Potsep-kina. R. N. Determination of ethoxyl groups in certain organosilicon and organoaluminium compounds, 2262.

Bonhorst, C. W., and Mattice, J. J. Colorimetric determination of selenium in biological materials,

Boni, A. L. Determination of mixed β-y radionuclides in urine, 3400.

Boniforti, L., and Doretti, M. Determination of aldrin and dieldrin residues in olive oil, 792. See also Anselmi, S., 1578, 1941, 2996, 5434,

5445.

Bonnemay, M. See Allard, J., 1339.
Bonner, T. G. Detection of polyhydric compounds and their carboxylate esters with potassium periodatocuprate, 4822.

Bonnichsen, R., Maehly, A. C., and Nordlander, S. Separation and identification of caffeine, phena-zone and phenacetin from human tissue, 4405.

Bonomo, E. Determination of urinary glycoprotein soluble in perchloric acid, 2399.

Bonsels, W. See Pohl, F. A., 4701.
Bontemps, R. Methods for the colorimetry of theophylline and caffeine, 5408.

Bonting, S. L., and Rosenthal, I. M. Effects of the method of tissue preparation on the assays of tissue enzyme activities, 4979.

Boom, G. See Perdok, W. G., 5499.
Booman, G. L. See Maeck, W. J., 977, and Yamamura, S. S., 2666.
Boos, R. N. Volumetric micro-determination of organically bound sulphur and organic and interesting sulphure and organic and inorganic sulphates, 2750.

Booth, E., and Parker, A. Determination of oxygen in beryllium by the micro vacuum fusion method,

and Terry, E. A. Determination of uranium by cathode-ray polarography, 3725.

Extraction of pigments from plant Booth, V. H. material, 1126.

Borchers, R. Spectrophotometric determination of amino acids. Alkaline copper salt method using (biscyclohexanoneoxalyldihydrazone), cuprizone 1141.

Borchert, O. Complexometric determination of boron in the presence of barium, 2088.

Borecký, J. Pinakryptol Yellow-a specific reagent for the detection of arylsulphonic acids on chromatograms, 3344.

- and Gasparič, J. Identification of organic compounds. XXXIII. Paper-chromatographic identification and separation of polyhydric alcohols, their esters and chlorohydrins, 5273.

See also Cata, F., 2031.

Boreham, G. R., and Cunningham, J. A. P. Quantitative determination of some polyhydric phenols,

Bořek, J. See Kudláček, V., 3819. Borisov, A. I. See Ioffe, B. V., 5269. Boriss, P. See Weiner, R., 973.

Borkenstein, R. F. Apparatus for analysing the alcoholic, acetone or ether content of the human breath, 799.

Borlera, M. L. Determination of zirconium in rocks and quartz sands rich in iron, 1701.

Borner, K. See Mattenheimer, H., 2511.
Borok, M. T. See Aleksandrov, V. V., 4576.
Borovskii, I. B., Shteinberg, A. N., and Bugulova, V. V. Quantitative determination of bismuth, lead, zinc and cadmium in silicon by the sublimation method, 924.

Skotnikov, S. A., and Petrushin, I. F. Spectrographic analysis of nitrogen in metals, 449.

Borrowdale, J., Jenkins, R. H., and Shanahan, C. E. A. Determination of boron in plain-carbon and alloy steels, 1007

Bortnik, L. S. See Yudelevich, I. G., 2057. Bosch, L. See Bloemendal, H., 1617. Bose, B. C., and Vijayvargiya, R. Spectrophoto-metric method for the estimation of reserpine, 2424.

Bose, P. C. See Kannan, L. V., 3961. Bose, S. See Verma, R. M., 3805. Böttcher, C. J. F., Woodford, F. P., Boelsma-van Houte, E., and Gent, C. M. van. Analysis of lipids extracted from human arteries and other tissues, 2380.

Böttger, S., and Steinmetzer, W. Selective enzymatic determination of sugars in sugar factory products, 1560. Determination of L-glutamic acid

in beet sugar factory products, 1561.

Bottini, E., Strigini, P., and Antognoni, G. Determination of a-amino nitrogen by the copper

method, 1855.

and Zavanayu, A. Determination of the vitamins in vegetable and fruit products by infra-red spectrometry, 756.

Botty, M. C. See Rochow, T. G., 5125. Boudene, C. See Fabre, R., 205, and Truhaut, R.,

Boulanger, P. See Biserte, G., 3901.
Boulet, M. See Marier, J. R., 1564, 2457.
Boumans, P. W. J. M. Recording spectrophotometers, 2001. Recording photometers, 2010.

Bouquiaux, J., and Mertens, A. Determination of oil in waters and sewage, 4519.

Bourjol, G. Determination of ammonium salts in certain substances susceptible of being decomposed to give ammonia on boiling with fixed alkalis, 1705.

Bourne, E. J., Hutson, D. H., and Weigel, H. Paper ionophoresis of carbohydrates in molybdate solutions, 1787.

Bourrillon, R., and Got, R. Apparatus for zone electrophoresis on starch columns, 1207.

Boutet, J., and Imbert, G. Measurement of the thicknesses of electrolytic deposits of copper and nickel on a metal base free from these two elements by solution emission spectrography,

Bou'hilet, R. J., and Lowrey, W. The gas chromatograph in the determination of fusel oil in grape

brandy, 1933.

Bouvier, J. A. F., and Guest, R. J. Thoron colorimetric method for thorium determination: effect of some common ions, and methods for overcoming interference, 941.

Bouwman, W. C. E. Determination of 4-chloro-2methylphenoxyacetic acid (MCPA), dinitrocresol and 2-sec.-butyl-4:6-dinitrophenol [dinoseb], respectively, in mixtures by chromatographic separation, 4036.

Bouza, A. P. See Prieto Bouza, A. Bovalini, E., and Casini, A. Spectrophotometric determination of apiole and analogous compounds containing methylenedioxy groups by reaction with gallic acid and chromotropic acid, 1435.

and Piazzi, M. Radial chromatography in the analysis of iron oxides and ferrites containing various impurities, 1357. Potentiometric and heterometric titration of thioacetamide solutions

with silver nitrate, 1426.

Pucini, L., and Conti, M. L. Separation and determination of micro amounts of boron in uranium salt solutions by means of a barium borotartrate complex, 1300.

Pucini, L., and Lo Moro, A. Micro-determination of boron by flame photometry of a barium

borotartrate complex, 1296.

Bovey, L., and Steers, E. B. M. Optical emission spectra of some rare-earth and transuranic elements in the 1 to 3-micron region. I. Apparatus, 314; IV. The spectrum of neptunium, 2212.

Steers, E. B. M., and Atherton, N. Optical spectra of some rare-earth and transuranic elements in the 1 to 3-micron region. II. Wavelength measurement and the spectrum of plutonium-239, 988.

Bowden, C. H. Solvent combination for aminoacid chromatography, 1135.

 Bowen, F. J. See Silverman, H. P., 3276.
 Bowen, H. J. M. Determination of chlorine, bromine and iodine in biological material by activation analysis, 2870.

Bowen, J. E. See Liederman, D., 3359. Bower, C. A. Determination of sodium in saline solutions with a glass electrode, 25.

Bower, G. M. See Lady, J. H., 626.

Bowers, G. N., jun. Measurement of isocitric

dehydrogenase activity in body fluids, 4984.

Bowers, R. C., and Russell, H. D. Polarographic behaviour of aryl sulphones and sulphoxides,

Bowersox, D. F., Smith, D. M., and Swift, E. H. Precipitation of zinc sulphide from acid solutions by thioacetamide, 3649.

Bowes, J. H. Hydroxyproline as a measure of hide substance, 1466.

Bowman, F. W., and Holdowsky, S. Microbial assays of antibiotics using seeded plates stored in the refrigerator for several days to four weeks,

Bowman, R. L. [Symposium on catecholamines.] Fluorescence and its measurement, 4938.

Box, G. F., and Walsh, A. Atomic absorption spectrophotometer, 5102.

Boxer, J. Evaluation of a micro-method for serum calcium determination with Calcon as indicator,

See Eble, T. E., 1896. Boyack, G. A. Boyars, I. S. See Chizhikov, A. I., 355.
Boyce, I. S. See Cameron, J. F., 2821.
Boyd, G. R. Determination of residues of O-2: 4-di-

OO-diethyl phosphorothioate chlorophenyl (V-C 13 Nemacide) by cholinesterase inhibition, 2506

Boyd, M. L., and Montgomery, D. S. Molar volume equation for structural analysis of hydrocarbons, 3357. Molar refraction equation for structural analysis of hydrocarbons, 3358.

See also Montgomery, D. S., 1406.

Boyd, R. N., and Meadow, M. Characterisation of alkyl halides by use of ethylenethiourea, 4819. Boyle, A. J. See McCann, D. S., 4898, and Zdybek,

G., 4812.

Boyle, E., and Moore, R. V. Precipitation method for estimating serum β -lipoproteins, 232.

Bozalek, S. J. See Morris, A. G. C., 2499. Bozhevol'nov, E. A. Determination of zinc by the luminescence method with salicylaldehyde semicarbazone, 902.

Dziomko, V. M., and Serebryakova, G. V. Quantitative determination of zinc and cadmium,

3153.

Lukin, A. M., and Gradinarskaya, M. N. Quantitative determination of gallium, 3164. See also Lukin, A. M., 4164.

Bozhko, E. A. See Tarasov, N. Ya., 2066.

Bozsai, I. Amperometric titrations with a rotating V. Determination of the platinum electrode. cobalt content of metals, alloys and silicates with potassium ferricyanide, 1374.

Bozyk, Z., and Krauze, S. Reduction of dehydroascorbic acid, by means of gaseous hydrogen sulphide, related to pH range and time, 5468.

See also Krauze, S., 766.

Brabson, J. A., and Wilhide, W. D. Direct determination of available phosphorus in fertilisers: use of sodium chlorate to destroy citrate, 1964. Brachaczek, W. See Kemula, W., 356, 357, 471,

550, 5167

Bradlord, G. R. See Pratt, P. F., 286. Bradley, A., and Sutton, N. V. Analysis by phosphor

poisoning, 1643.

Bradley, H. B., and Neal, D. J. Determination of primary amino alkyl alkoxy silane coating on glass substrates, 2860.

Bradshaw, G., and Rands, J. Determination of iron

in tin of 99-999 per cent. purity, 3685.

Bradshaw, W. G. See Silverman, L., 2304, 2580.

Bradstreet, R. B. Modifications of Kjeldahl digestion for organic nitrogen, 3789.

Brækkan, O. R. See Lambertsen, G., 3524. Brajter, K. See Kemula, W., 4129, 5154, 5255.
Brancaccio, A., D'Alessandro, B., De Luca, R., and Jacono, G. Estimation of C₂₁ \(\Delta^4\)-3-oxosteroids

in human urine, 2907.

- D'Alessandro, B., Galdiero, F., and Jacono, G. Estimation of C_{10} Δ^4 -3-oxosteroids in human urine, 2906. Separation of free 17-hydroxysteroids from steroid conjugates in urine by column

chromatography, 2910.

D'Alessandro, B., and Jacono, G. Effectiveness of various types of hydrolysis in the extraction and determination of steroids with 21 carbon atoms, 3453. Determination of corticosteroids in plasma and urine. A proposed unified method, 3457.

See also D'Alessandro, B., 3449, 3455.

Brandmüller, J. Analytical applications of the Raman effect, 2607. Brandner, J. D. See Brewster, M. D., 619.

Brandstätter-Kuhnert, M., and Kofler, A. scopic characterisation and identification of drugs. I, 1535. Microscopic identification and polymorphism of sex hormones, 2411.

- Kofler, A., and Kostenzer, O. Microscopic characterisation and identification of drugs. II,

A., and Berstermann, W. Experience with direct-recording spectrographs in the steel-works laboratory. V, 1755.

Brandt, M., and Vanden Berg, R. H. Determination

of tetraethyl-lead in gasoline by titration with ethylenedinitrilotetra-acetate, 2824.

Brandt, W. W. Gas-chromatography symposium, 5085.

See also Duswalt, A. A., 4302.

Brannock. W. W. See Shapiro, L., 4041.
Branson, J. J., Jessen, G. E., Clarke, J. R., and
Hawes, W. W. [Second Conference—Analytical
Chemistry in Nuclear Reactor Technology. Part 2. Instrumentation, remote-control techniques and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Estimation of boron in graphite by reactivity change, 3103.

Brash, M. P. Spectrographic analysis of air samples

for beryllium contamination, 3528.

Brauer, F. P. See Roberts, F. P., 2110. Brauer, G. M. See Strassburger, J., 4886.

Braun, T., Maxim, I., and Galateanu, I. Radiometric determination of calcium, strontium and magnesium by EDTA titration, 2634.

See also Galateanu, I., 3650.

Braunbeck, J. Absorption spectrophotometry of samples of low transparency, 4482. Braun-Menéndez, E. See Paladini, A. C., 213.

Brautti, G. Effects of the variation of the ambient pressure on the intensity of arc emission of some elements, 2550.

Brazhnikova, M. V. See Khristotorov, B. S., 932. Breckinridge, C. E., jun., and Christian, J. E. Inverse isotope dilution analysis of salicylic acid,

Brekke, J. E. See Nury, F. S., 743. Brenner, M. W., Owades, J. L., Schapiro, G. J., and Laufer, S. Reducible disulphides in beer. I. Analytical method, 3996.

Brenner. N. Gas chromatography as a microanalytical tool, 811.

Cieplinski, E., Ettre, L. S., and Coates, V. J. Molecular sieves as subtractors in gas-chromatographic analysis. II. Selective adsorptivity with respect to different homologous series, 5092.

and Ettre, L. S. Condensing system for determination of trace impurities in gases by gas

chromatography, 3053.

See also Ettre, L. S., 5092, and Hausdorff, H. H., 302

Bresnick, S. R. See Merritt, C., jun., 3502. Brewster, M. D., and Brandner, J. D. Cloud-point as a means of characterising the polyglycols of

polyoxyethylene (8) stearate, 619. Breyer, A., and Rieman, W., III. Salting-out chromatography. VI. Effect of length of the hydrocarbon chain, the eluent salt, and the crosslinking and ionic form of the resin, 5084.

Breyer, B. See Beevers, J. R., 1700. Brháček, L., and Kunzová, K. determination of low contents of boron in alloyed steel, 1757.

Brice, B. A. Glass colour standards and a uniform chromaticity scale for sugar products, 4086.

Bricker, C. E. See Feldberg, S. W., 3094.

Brida, J. See Singliar, M., 5266.
Bridge, E. P. See Oldfield, J. H., 4110.
Brid'ko, Yu. I. Chromatographic separation of

pentose and hexose in hydrolysates, 1591.

Brieskorn, C. H., and Berg, H.-W. Process for determining tryptophan. Tryptophan peptide value, 227

and Herrig, H. Effect of ester formation on the results of cholesterol determination according to Riffart and Keller, 2408. Chemistry of the Liebermann - Burchard colour reaction for sterols and triterpenes and their esters, 2901.

and Wenger, E. Constituents of Salvia officinalis L. XI. Analysis of essential oil of sage by gas

and thin-film chromatography, 3847.

Brieux de Mandirola, O. Spectrographic determination of rare-earth elements in monazites and cerium minerals, 4694.

Briggs, A. R. See Connerty, H. V., 1146. Bril, K., Bril, S., and Krumholz, P. Separation of metal ions by means of ion-exchange membranes. I. Separation of rare-earth mixtures, and of thorium - rare-earth mixtures with EDTA, 3177. Holzer, S., and Réthy, B. Photometric titration of thorium and the rare-earth elements with

ethylenedinitrilotetra-acetic acid, 1326.

Bril, S. See Bril, K., 3177. Briner, G. P. Analysis of adenine polyphosphates by paper chromatography, 1520.

— See also Johnstone, B. M., 2530.

British Aluminium Co., Ltd. Improvements in the determination of the gas content of liquid metals,

British Iron and Steel Research Association. Spectrographic determination of residual elements in steel. Report No. 2. Excitation index technique, 1359. Gravimetric determination of lead in iron and steel (lead content >0.05 per

cent.), 3752.

British Standards Institution. Methods of sampling and analysis of vegetable-tanned and chrometanned leathers, 631. Laboratory potentiometric pH meters, 841. Ethanediol antifreeze. Type A. Triethanolammonium orthophosphate and sodium mercaptobenzothiazole inhibited, 1104; Type B. Sodium benzoate and sodium nitrite inhibited, 1105; Type C. Sodium tetraborate inhibited, 1106. Iron in ores, slags and refractories, 1356. Aluminium in iron, steel and ferro-alloys, 1362. Pentachlorophenol, 1432. Nitrogen combustion train (micro-Dumas). Microchemical apparatus. 1772. Standard methods for the sampling and analysis of fuel gases, 1817. Methods for the analysis of aluminium and aluminium alloys. Part 2: Magnesium, 2639. Methods of testing plastics. Part 1: Effect of temperature, 2851; Part 4: Analytical methods and viscosity in solution, 1461, 3850; Part 5: Miscellaneous methods, 4382. Calcium-base greases, 2828. Sampling of coal and coke. Part 1: Sampling of coal, 2830. Methods for the analysis and testing of coal and coke. Part 5: Gross calorific value of coal and coke, 5316: Part 8: Chlorine in coal. 616; Part 9: Phosphorus in coal and coke, 2831; Part 15: Fusibility of coal ash and coke ash, 3842. Tartrazine, 2844. Methods of testing vulcanised rubber. Parts B11 and B12: Rubber polymer determinations, 2861. Methods for the chemical analysis of milk, 2967. Methods for the analysis of water-soluble coal-tar dyes permitted for use in foods, 2970. Test-tubes and boilingtubes, 3022. Density hydrometers for use in milk. Part 2: Methods, 3024. Ammonia distillation apparatus (Markham). Microchemical apparatus, 3030. Halogens and sulphur. Combustion train (micro-Grote). Microchemical apparatus, 3083. Activated alumina for use as desiccant for packages, 3162. Silica gel for use as desiccant for packages, 3182. Graduated measuring cylinders, 3543, 4544. General purpose thermometers, 3579. Secondary reference thermometers (Centigrade scale), 3580. Glycerine (glycerol), 3802. Acetic acid, 3804. 1-Phenyl-3-pyrazolidone (photographic grade), 3833. Test methods for bitumen, 3843. Methods of testing rubber latex. Part 2: Chemical and physical tests, 3853. Weighing vessels for microchemical analysis, 4039. Micro-nitrometer (Pregl type), 4042. Silicon in aluminium and aluminium alloys (perchloric acid method), 4160.

British Standards Institution-continued

Cleanliness of fillings and stuffings for bedding. upholstery, toys and other domestic articles, 4380. Density bottles, 4543. Tables for use in the calibration of volumetric glassware, 4546. Methods for the analysis of copper alloys. Part 6: Tin (nickel coil reduction method), 5152; Part 7; Silicon (photometric method), 5152; Part 8: Phosphorus (photometric method, 5152. Methods for the analysis of iron and steel. Part 41: Lead in carbon steel and low-alloy steel, 5247.

Brito, L. See Forjaz, A., 2031.

Britt, R. D., jun. See Keirs, R. J., 2031.

Brixner, B. B. See Ungnade, H. E., 1626.

Brochmann-Hanssen, E. See Kaul, P. N., 3464.

Brockelt, G., and Pohloudek-Fabini, R. Micro-analysis of essential oils. II. Polarographic determination of micro quantities of carvone in vegetable material, 2841.

Brodovsky, E. R. See Pearson, W. N., 763. Broekhuysen, J. See Deltour, G., 4941. Brofeldt, M. Calculation of original wort in beer,

Brogioni, M., and Franconi, U. Detection of added

xanthophyll in alimentary pastes, 2449.

Brohult, S., Ryhage, R., Spetsig, L.-O., and Stenhagen, E. Mass-spectrometric studies of hop bitter substances, 4001.

Brokopf, W. See Manecke, H., 1755. Bronsch, K. See Briggemann, J., 2500. Brookes, H. E., and Solomon, L. E. Determination of mercury by distillation from its compounds and preparations, 2955.

Brooks, J. See Williams, A. F., 3102. Brooks, R. R., Ahrens, L. H., and Taylor, S. R. Determination of trace elements in silicate rocks by a combined spectrochemical - anion-exchange

technique, 4798.

See also Edge, R. A., 162. Brooks, V. T. Gas - liquid chromatography: separation of close-boiling phenol isomers, 2796.

Brouchek, F. I. See Eristavi, D. I., 2738.

Broussard, J. O. See Schnopper, I., 1827.

Brouwer, T. Identification of p-phenylenediamine in hair dye, 1826.

 Brown, A. L. See Jurinak, J. J., 5049.
 Brown, C. T., Howes, J. E., jun., Elleman, T. S.,
 Townley, C. W., and Sunderman, D. N. Radiometric methods for the determination of magnesium and calcium in Portland cement, 4674.

Brown, C. W. Venturi jet (atomiser)-type burner for determining sulphur in light petroleum products, 5119.

Brown, E. A. See Ellis, W. G., 335, and Laux, P. G.,

Brown, F. X-ray fluorescence analysis, 336.
Brown, G. W., jun., and Cohen, P. P. Comparative biochemistry of urea synthesis. I. Methods for the quantitative assay of urea-cycle enzymes in liver, 1882.

Brown, H. H. Determination of blood urea with p-dimethylaminobenzaldehyde, 2877.

Brown, K. D. See Helbert, J. R., 2395.

Brown, M. P., Okawara, R., and Rochow, E. G. Infra-red spectra of some methyl derivatives of germanium and tin, 5292.

Brown, R. A., Skahan, D. J., Cirillo, V. A., and Melpolder, F. W. High-mass spectrometry. Propylene polymer, alkylated benzene and wax analysis, 2029.

Brown, R. E. See Oppermann, R. A., 2113.
Brown, S. K. Precision of preformed versus laboratory-prepared graphite electrodes, 4076.

Brown, W. B., and Steinbach, J. F. Spectrophotometric determination of cobalt after extraction of the thiocyanate complex with acetylacetone, 2737.

Brown, W. D. Determination of serum cholesterol

with perchloric acid, 3924.

Bruce, T., and Ashley, R. W. Polarographic determination of tin in Zircaloy-2, 926.

See also Aiken, A. M., 118.

Bruch, J. Experience with direct-recording spectrographs in the steel-works laboratory. XIII, 4274. Bruckenstein, S. Spectrophotometric titration of

water in acetic acid, 2774.

— See also Kolthoff, I. M., 4888.

Brudz', V. G., Drapkina, D. A., Smirnova, K. A.,

Titov, V. I., Pokrovskaya, I. E., Osiko, E. P.,

Doroshina, N. I., and Maslinikova, V. I. Colorimetric determination of scandium, 3169.

Bruegemann, W. See Yalman, R. G., 894. Brüggemann, J., and Bronsch, K. Determination of nitrofurazone in vegetable and animal tissue,

Bruin, H. J. de. Determination of traces of oxygen in sodium metal by infra-red spectrophotometry.

Brunauer, S. See Copeland, L. E., 1769. Brunello, F., and Rossi, G. Accelerated analysis of

cotton - viscose rayon blends with formic acid zinc chloride reagent, 1831.

Brunish, H. See Hardon, H. J., 5056. Brunisholz, G., and Quinche, J. P. Chromatographic procedure for the determination of rare-earth metals, particularly cerium-earth metals, 2654.

Brunius, E. Assay of vitamin-A oils. A report on three collaborative experiments, 3002.

Brunnée, C. Mass-spectrometer inlet-system for the analysis of higher hydrocarbons, 3101.

Brunner, R. See Machek, G., 3538.

Bruno, M. M., and Stoddard, R. L. Polarography of 2-mercaptobenzothiazole, 1088. Bruno, S., and Arbore, E. Separation of Novocaine

(procaine) from adrenaline in solution, 2939.

Bruns, B. P. See Kartseva, V. D., 2936.
Brunstad, A. See Warren, H. D., 2187.
Bryan, F. R. See Runge, E. F., 18, 2642.
Bryan, J. T., and Lincoln, W. R. Determination of rotenone in pharmaceuticals, 1158.

Bryant, F. J., Morgan, A., and Spicer, G. S. Determination of radio-strontium in biological materials,

Osmond, R. G., and Spicer, G. S. [International Symposium on Microchemistry. Birmingham. 1958.] Determination of minute amounts of fission-product activity in water and biological materials, 3102.

Packman, G., and Spicer, G. S. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Determination of radio-strontium in biological materials, 2031.

Brzozowski, S. See Kemula, W., 297.

Bua, E., and Manaresi, P. Quantitative analysis of ethylene - propylene copolymers by the mass spectra of their pyrolysates, 3380.

Manaresi, P., and Motta, L. Determination of propadiene traces in propene, 2756.

Buben, I. See Stárka, L., 5009.

Buccheri, A., and Ferreira Alves, V. X-ray spectrographic determination of zinc in aluminium alloys,

Bucci, F., Cesari, A., and Amormino, V. Tin in canned food and foods in general, 730.

and Tandoi, P. Determination of fluorine in wine, 749. Detection of esters of p-hydroxybenzoic acid in wine, 1924.

Buchan, J. L. See Patterson, S. J., 3983. Buchanan, D. L., and Corcoran, B. J. Sealed-tube combustions for the determination of carbon-14 and total carbon, 2251.

Buchanan, E. B., jun., and Wagner, W. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Spectrophotometric determination of iron with 2-fluorobenzoic acid,

Buchanan, M. A. Paper chromatography of the

saturated fatty acids, 2485.

Büchi, J., and Perlia, X. Relationships between the physical-chemical properties and the activity of local anaesthetics. IV. Determination of cinchocaine and derivatives, 5005.

Büchler, A. See Heslop, W. R., 5242.
Büchler, W. Polarography in industrial practice,

Buchmann, O. See Berther, C., 2294.

Buchowski, H., and Olempska, Z. analysis of nitrobenzoic acid, 188. Extraction

Buckley, J. E. See Kunkel, R. K., 612.

Budanova, L. M., and Zhukova, N. A. Determination of beryllium in aluminium alloys by means of beryllon II, 40.

Budd, R. E. See Davis, D. R., 3437. Budēšinský, B. Apparatus for semi-micro determination of active hydrogen and for quantitative hydrogenation, 2616. Analytical determination of -C: C- bonds, 2752.

Oxidimetric hydroxylamine method of carbonyl determination, 2261. Com-plexometry in organic analysis, VII. Deterplexometry in organic analysis. mination of organic bases with cadmium complexonate, 3972. Micro-determination of alkoxyl groups, 4814.

Vaničková, E., and Körbl, J. Complexometry in organic analysis. VIII. Determination of some derivatives of thiourea (determination of

sulphides), 4340.

Budevskii, O. B. Complexometric determination of lead, 3689.

Karolev, A. N., Karanov, R. A., and Simova-Filippova, L. Complexometric determination of zinc in concentrates with the indicators xylenol orange and methylthymol blue, 3152.

 Budke, C. C. See Banerjee, D. K., 2670.
 Budzynski, A. Z., and Zubrzycki, Z. J. Separation of higher fatty acids from erucic acid by paper chromatography, 4494. See Erko, V. F., 1347, and Lifshits,

Bugaeva, N. I. E. V., 2194.

Bugorkova-Zelenetskaya, A. A., Novikova, E. N., and Petrova, L. N. Quantitative determination of halogens in organic compounds, 2747

and Petrova, L. N. Determination of halogen in halogen-substituted organic compounds, 558.

Bugulova, V. V. See Borovskii, I. B., 924.

Buhl, F. See Gregorowicz, Z., 4150.

Buijze, C. See Tertoolen, J. F. W., 432, 3740.

Bukata, M. See Blaszkowicz, J., 2840.

Bukhtiarov, V. E. See Ryabchikov, D. I., 5189.

Bukina, V. K., and Moizhes, M. Ya. Determination of halogans by fusion with profession metal of halogens by fusion with potassium metal, 4804

Bukowska, H., and Gierlowska, J. Spectrophoto-metric determination of diprophylline and phenobarbitone in their mixtures, 5415.

Bulatov, M. I. See Shvedov, V. P., 2676.
 Bullock, J. S., and Maier, R. H. Chelatometric titration of calcium using a mixed indicator, 396.

Bulycheva, A. I., and Mel'nikova, P. A. Determination of free silica in the presence of silicates with pyrophosphoric acid, 424.

Bunce, S. C. See Wiberley, S. E., 4349. Bungenberg de Jong, H. G. See Jong, H. G.

Bungenberg de. Bunyan, J. Orange-G binding as a measure of protein content, 2451.

See also Edwin, E. E., 4506.

Buraczewska, L. See Reifer, I., 1505.

Burcar, P., See McCann, D. S., 4898.

Burch, M. R. See Hanka, L. J., 1896.

Burchfield, H. P., and Prill, E. A. Isolation of

resins from vanilla by chloroform - amine extraction, 1177. Characterisation of non-carbonyl volatiles of vanilla by gas chromatography, 1920. Characterisation of vanilla and other plant extracts by paper chromatography, 3507.

See also Prill, E. A., 4478.

Burck, H. C. Colorimetric micro-Kjeldahl method with direct nesslerisation for routine determination of nitrogen (nitro and nitroso groups excepted), 4311.

Burd, R. M., and Goward, G. W. Polarographic determination of uranium VI in uranium oxides; determination of oxygen to uranium ratios,

1343.

Goward, G. W., Hartman, M. D., McCracken, M. A., and Wilson, B. B. Determination of aluminium as an impurity in zirconium and

Zircaloy, 939.

Burger, K., and Schulek, E. Bromine chloride as a volumetric reagent. Procedure for the determination of maleic and fumaric acids, 3807. Determination of the actual content of acid chloride in the chlorides of carboxylic acids,

See also Přibil, R., 447, 4726, and Schulek, E., 168, 451, 509.

Burgess, J. S. See Amphlett, C. B., 5147.
Burglen, L., and Longuet, P. Chemical determination of sodium and potassium in raw materials and clinker in cement works, 3777.

Burker, A. See Novel, E., 774. Burker, A. See Jangg, G., 3723.

Burkhalter, A. See Shore, P. A., 3424. Burlaka, V. P. See Alimarin, I. P., 3167. Burleigh, J. E., McKinney, O. F., and Barker, M. G.

Determination of vinylpyridine, acrylonitrile (vinyl cyanide) and acrylic acid units in elastomeric polymers, 2340.

Burley, R. A., and Bennett, W. J. Spectroscopic analysis of poly(vinyl chloride) compounds. I. Infra-red spectrometric analysis, 3381.

Burneister, W. See Blasius, E., 467. Burns, J., and Holtman, D. F. Tennecetin: a new anti-fungal antibiotic. General characteristics,

Burns, R. J. See Appleton, M. D., 422. Burns, S. M. See Mansford, K. R. L., 3434.

Burriel-Marti, F. [International Symposium on Microchemistry. Birmingham, 1958.] Flame photometry with micro samples and micro concentrations, 3102.

Barcia Goyanes, C., and Alvarez, Q. Analytical applications of thermogravimetry. V. Thermoapplications of thermogravimetry. gravimetric analysis of lithopone, 400.

Pino Pérez, F., and Duchemin, J. F. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Diphenyldithiourea as reagent for the noble metals and especially for the colorimetry of palladium, 2031.

Ramirez-Muñoz, J., and Asuncion-Omarrementeria, M. C. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Interferences of three elements in flame photometry. The Cr - Co - Mn system, 2031.

Burriel-Marti, F., Ramirez-Muñoz, J., and Rexach-M. de Lizarduy, M. L. [Fifteenth International Congress of Pure and Applied Chemistry, Lisbon. Flame-photometric determination of sulphate ion, 2031.

Rexach-M. de Lizarduy, M. L., and Ramirez-Muñoz, J. Quantitative flame-photometric determination of sodium, potassium and calcium in the presence of large amounts of salts, 2620.

Burrill, A. M. See Crisler, R. O., 3302.
Burros, C. L. See Surak, J. G., 3737.
Burrows, G. See Metropolitan-Vickers Electrical
Co., Ltd., 1996.

Burt, R., and Minkoff, G. J. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, Analysis of combustion products. Use of infra-red spectrometry for following hightemperature kinetics, 2031.

Burtin, J.-F. See Pesez, M., 5307. Burton, A. L. See Miller, G. L., 2767. Burton, J. D., and Riley, J. P. Spectrophotometric determination of germanium with phenylfluorone,

Burton, R., Jacobs, R. M., and Valecko, E. R. Determination of tantalum in niobium with an X-ray fluorescence monochromator, 2177.

Burtseva, E. I. See Levin, E. S., 3346.

Buscarons, F., and Nieto, F. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Determination of bivalent copper with benzidine-o-sulphonic acid, 2031.

Buschow, K. H. J. See Vries, G. de, 3643.
Busellu, M. A., D'Agostino, O., and Rossi, C.
Techniques for the micro-combustion of substances labelled with carbon-14 and the measurement of the activity with carbon dioxide counters, 4301.

- Marzadro, M., and Rossi, C. Micro-determination of carbon in substances labelled with carbon-14 and the filling of the counter with carbon dioxide, 1399.

Busev, A. I., and Fan. C. Complexometric determination of molybdenum after its reduction to the quinquevalent state, 2199.

and Kanaev, N. A. Direct complexometric titration of indium with 4-(2-pyridylazo)resorcinol as indicator, 4170.

and Li, G. Chromometric determination of molybdenum in the presence of certain elements using platinum and mercury electrodes, 482. Molybdenometry. II. Titration of molybdenum^{VI} by means of molybdenum¹¹¹ solution, 5228.

and Polyak, L. Ya. Determination of cadmium in magnesium alloys by means of nickel diethyl-

phosphorodithioate, 1885. and **Shkrobot, E. P.** Determination of indium and gallium with morin, 4168.

and **Tiptsova**, **V. G.** Analytical chemistry of thallium. I. Complexometric determination, 56. Photometric determination of thallium with tetramethyldiaminodiphenylantipyrinylmethanol,

Tiptsova, V. G., and Afanas'eva, L. M. Analytical chemistry of thallium. III. Spectrophotometric determination of thallium with antipyrine

(phenazone) derivatives, 2650. Zholondkovskaya, T. N., and Kuznetsova, Z. M. Separation of indium and gallium by means of

diethyldithiocarbamate, 4167.

Bush, D. G., Zuehlke, C. W., and Ballard, A. E.
Volumetric determination of silver using thioacetamide, 1273.

Bush, M. T. [Progress in microchemistry.] tillation, sublimation and crystallisation, 2033.

Buslin, E. See Jehenson, P., 1363. Bussi, M. See Alfonsi, B., 5171.

Butkiewicz, K. See Kemula, W., 297.
Butler, J. R., and Hall, R. A. Separation of total rare-earth elements and thorium from some multiple-oxide minerals, 4182.

Butler, W. L., and Norris, K. H. Spectrophotometry of dense light-scattering material, 5502.

Butta, E. See Baccaredda, M., 2031.
Butjikin, L. P. See Kreimer, S. E., 1751.
Buu-Hoi, N. P., and Jacquignon, P. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Relation between the molecular structure and complex formation with tetrachlorophthalic anhydride, 2031.

and Xuong, N. D. Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956. Analytical and biochemical applications

of 6:8-dichlorobenzoyleneurea, 2031.

Buyk, J. J. See Kies, H. L., 3243. Buys, G. S., and Potgieter, D. J. J. Spectrophoto-metric method for the determination of uric acid

in poultry excreta, 4032.

Buys Ballot, A. F. K., and Terlingen, J. B. A. Estimation of quinine oxidase in serum in liver disease, 4988.

Buza, D. See Woliński, J., 4356.
Buzagh, A., and Szántó, F. Potentiometric titration
of sodium clay minerals, 3773.

Buzás, I. See Érdey, L., 2040, 2041. Buzás, L. Application of sodium tetraphenylboron (Kalignost) in chemical analysis, 851.

Buzincu, J., and Petrescu, M. Quantitative spectral

analysis of germanium and indium in ores, 430.

Buzlanova, M. M. See Terent'ev, A. P., 2295.

Buzon, J., Chovin, P., Fanica, L., Ferrand, P., Guiochon, G., Huguet, M., Lebbe, J., Serpinet, J., and Tranchant, J. Gas-phase chromatography. Proposals for a vocabulary and system of notation for retention values, 1995.

Buzzelli, G. See Mosen, A. W., 3622. Byczyńska, B. See Lasiewicz, K., 1282, 1722. Byer, A. J. Statistical control of alcohol and extract

analyses in beer, 2985.

Bÿkov, I. E., and Gorshkova, L. S. Polarographic determination of tellurium in copper alloys, 1724. Determination of lead in lead-brass (Muntz metal), 3691.

Bÿkova, L. N. See Freshkov, A. P., 2775. Bÿkova, T. V., and Yakovlev, B. M. Spectrographic analysis of acid tin- and nickel-plating baths,

Bŷkovskaya, Yu. I. Determination of niobium in the presence of large amounts of titanium, 2172.

Byles, D. See Goldman, E., 2494.

Byrne, F. P. See Lady, J. H., 626. Bystedt, J., Swenne, L., and Aas, H. W. Determination of trimethylamine oxide in fish muscle, 1174.

Cacace, F., Ikram, M., and Stein, M. L. Application of gas chromatography to the analysis of alcoholic distillates, 2465.

- and Inam-ul-Haq. Radiometric analysis of tritiated organic compounds by means of vapourphase chromatography, 4300. Radiometric analysis of volatile organic compounds labelled with carbon-14 and hydrogen-3 by vapour-phase chromatography, 5262.

Caccia, P. A. Spectrophotometric determination of 4-aminosalicylic acid, m-aminophenol and paminophenol, 1553.

Cacea, E. See Matei, I., 4665

Cajda, J. Complexometric determination of sul-

phates in urine, 640. Caldarera, C. M., Infante, R., and Sanguinetti, F. Nucleic acids of the liver of rats; ion-exchange chromatography of the purine and pyrimidine bases, 2389.

Caldas, A., and Gentil, V. Detection of carbon in spot-test analysis, 1397.

Calder, A. B. Evaluation of calibration data with reference to the variable internal standard method, 827.

Caldwell, J. E. See Stewart, F. N., 2804.
Caldwell, V. E. See Sympson, R. F., 4774.
Cali, J. P. See Flowe, L., 3181.
Cali, L. J. See Loveland, J. W., 65.

Califano, S., Piacenti, F., and Speroni, G. Infra-red and Raman spectra of isoxazole: the vibrational assignment, 190.

Callahan, C. M., Foti, S. C., and Lai, J. R. Cerimetric determination of molybdenum in high chloride media using the molybdenum blue reaction,

Calleja, J., and Fernández Paris, J. M. Complexometric determination of alumina in cement, 1042. Callicoat, D. L., and Wolszon, J. D. Carminic acid procedure for determination of boron, 1294.

Wolszon, J. D., and Hayes, J. R. Separation of microgram quantities of boron by mixed-resin-bed ion-exchange, 1295.

Calò, A. See Bellomonte, G., 5419. Calu, C. See Liteanu, C., 1301.

Calugareanu, S. See Spacu, P., 93.
Calvert, S., and Workman, W. Estimation of efficiency for bubbler-type gas absorbers, 5484.
Caly, E. R., and Kahle, G. R. Determination of fluorine as lithium duraid. 2217.

fluorine as lithium fluoride, 2717.

Calzolari, C., and Cerma, E. Artificial colouring materials excluded from use in foodstuffs. I.

Camboli, D. See Armeanu, V., 544.
Cambridge Instrument Co., Ltd. Apparatus for the measurement of dissolved oxygen, 1955.

Cameron, J. F., Boyce, I. S., and Glaister, R. M. Estimation of trace-water content in a halo-

genated oil by means of tritiated water, 2821.

Camp, B. J., and Moore, J. A. Quantitative method for the alkaloid of Acacia berlandieri, 4995.

Campbell, C., Gordon, S., and Smith, C. L. Deriva-tive thermoanalytical techniques. Instrumentation and applications to thermogravimetry and differential thermal analysis, 1220.

— See also Gordon, S., 5125. Campbell, D. E. See Williams, J. P., 1688. Campbell, D. J. See Theivagt, J. G., 1582. Campbell, D. N. See Union Carbide & Carbon

Campoell, E. See Saier, E. L., 2909.
Campbell, E. J. M. Haldane's apparatus for measuring carbon dioxide concentration in respired gases in clinical practice, 4551.

Campell, J. See Davis, H. M., 308.
Campell, J. A. See Pelletier, O., 1947.
Campbell, J. E. See McFarren, E. F., 1563.
Campbell, B. H., and Mellon, M. G. Indirect absorptiometric method for the determination of boron, 3657. Determination of bismuth based on the reduction of molybdophosphoric acid. An

absorptiometric method, 3707. Campbell, W. J. Apparatus for continuous fluorescence X-ray spectrographic analysis of

solutions, 4587.

Leon, M., and Thatcher, J. W. Solution techniques in fluorescence X-ray spectrography,

Campen, W. A. C., and Dumoulin, H. Method for ashing organic material without loss of zinc, and the determination of zinc with dithizone, 3647.

Campion, P. J. See Merritt, J. S., 4750.
Camuñas, A., and Dominguez, M. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Analysis of optical glass by the atomic auto-absorption of the spectral lines, 2031.

Canal, F., and Alemanni, A. Automatic apparatus for the semi-micro determination of nitrogen by

the Dumas method, 1401.

Canals, E., Marignan, R., and Bardet, L. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Study of membranes with the aid of radioactive tracers. Coefficient of dialysis, 2031.

Canbäck, T., and Harthon, J. G. L. Fluorimetric determination of adrenaline and noradrenaline,

Candido, A. See Géro, E., 5467. Candura, F. Determination of transaminases by photometric methods with 2:4-dinitrophenylhydrazine, 1533. Determination of transaminases. Problems of methodology, 2420.

Cannon, C. G. Infra-red spectra and molecular configurations of polyamides, 4889.

Cannon, M. R., Manning, R. E., and Bell, J. D. Viscosity measurement. The kinetic energy correction and a new viscometer, 5071.

Cannon, P. Precipitation of ammonium phospho-12-molybdate, 3701.

Canter, R. See Cooper, J. A., 4057. Canuti, A. Method for the detection of preservatives in beverages, 744.

Capaccioli, T., Sbrolli, W., and Vercellone, A. Polarographic analysis of lead and copper in commercial brass, 1699.

Capella, P. See Zotti, G. de, 3447. Capelle, R. Colorimetric determination of copper by means of biscyclohexanoneoxalyldihydrazone and

oxalyldihydrazide. 1; II; III, 4125.

Capitán, F., and Parellada, R. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956. Ultra-violet spectrophotometric determination of phenoxathiin, 2031. Capizzi, F. M. See Giuffrè, L., 2063. Caplan, S. R. Synergic method of carrying out

continuous electrochromatography, 4065.

Cáplescu, N. See Armeanu, V., 375, 405. Cappellini, F. Universal buffer based on tetramethylammonium hydroxide, 341.

Caprioli, G., Pavan, E., and De Vita, M. Vapourphase chromatography. II. Analysis of hydrocarbon mixtures, 1779.

— See also De Vita, M., 1057.

Caraway, W. T. Stable starch substrate for the determination of amylase in serum and other

body fluids, 3930.

Carballido, A., and Villanúa, L. Artificial food colours. IV. Spectrophotometry of the green, blue and violet water-soluble colours in acid. neutral and alkaline media, 2972; Appendix to Parts II, III and IV, 2972.

Carcasona, A., Unterharnscheidt, F., and Cervos-Navarro, J. Quantitative determination of 5-hydroxytryptophan, 5-hydroxytryptamine and 5-hydroxyindolylacetic acid by paper chromato-

graphy, 4954.

Card, C. S. See Rabatin, J. G., 2574. Cardinal, E. V. See Baumgartner, W. E., 1495.

Cardini, C. See Bellomonte, G., 5419. Carey, P. L. See Maass, A. R., 1484. Cariou, J. See Delga, J., 3465.

Caris, J. See Blom, L., 3040. Carlson, S. R., and Snyder, J. W. Candida albicans plate assay of nystatin, 251.

Carlsson, A. Symposium on catecholamines. Detection and assay of 4-(2-aminoethyl)-catechol (dopamine), 4938.

Carlson, M. E. See Kirsten, W. J., 4813. Carlton, J. K. See Shingler, A. J., 2427. Carmichael, R. H. Method for the routine determination of chlorpropamide in plasma, 4912.

Carmo, M. M. S. See Silva Carmo, M. M.

Carmon, B. See Bobtelsky, M., 3708.
Carnes, E. R. See Pearson, W. N., 763.
Carolan, R. Determination of calcium in sugarfactory products by means of the flame photometer, 259.

Carrington, R. A. G. Infra-red spectra of 1:2-epoxybutane, 176. Reference-beam attenuator for use in infra-red spectroscopy, 311.

Carroll, B., and Cheung, H. C. Determination of

amylose in starch, 4414

Carruthers, A., Oldfield, J. F., and Teague, H. J. Removal of interfering ions in the determination of betaine in sugar-beet juices and plant material,

Carson, J. F., and Wong, F. F. Colour reaction for thiosulphinates, 613.

Carter, G. B. See Anderson, W. M., 1081. Carter, J. A., and Dean, J. A. Determination of traces of certain rare-earth elements in uranium compounds by ion exchange and spectrography, 3233

Carter, J. R. Amperometric titration of disulphide and mercapto groups in proteins in 8 M urea,

Cartier, P., Chedru, J., and Baudequin, P. Phosphorus metabolism of erythrocytes. I. Analysis and distribution of acid-soluble phosphorus in normal human erythrocytes, 1112. Cartlidge, J., and Tipper, C. F. H. Separation and

identification of peroxides by paper chromato-

graphy, 465, 4321.

Cartoni, G. P., and Liberti, A. Gas chromatography of oxygen-containing terpenes, 4362.

Cartwright, P. F. S. Precipitation of basic bismuth formate from homogeneous solution and the determination of bismuth in presence of lead,

Carvalho, R. A. Guedes de. Separation of technetium from rhenium by electrophoresis and paper chromatography, 1745. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Determination of titanium in ilmenite by differential spectrophotometry, 2031. Casadevall, E. See Cauquil, G., 2031.

Casadevall, M. A. See Cauquil, G., 2031.

Casapieri, P., and Keppler, H. H. Quantitative determination of the principal biologically active constituent in Delnav, an organophosphorus insecticide, 1595.

Casazza, A. R. See McCurdy, W. H., jun., 1254. Casey, A. T., and Starke, K. Acidimetric titration of metal acetates in glacial acetic acid, 17.

 Casini, A. See Boyalini, E., 1435.
 Caso, M. M., and Cefola, M. Sulphamic acid as a primary standard in non-aqueous titrimetry, Sulphonic acids as non-aqueous titrants, 2784.

Cassidy, W., and Fisher, A. J. Determination of gallates in edible fats, 5449.

Casson, C. B., and Griffin, F. J. Determination of egg in certain foods by enzymic hydrolysis of the phospholipids, 262.

Cassuto, -. Vapour chromatography applied to the resins and essential oils of hops, 3995.

Castano, F. F. See Hilt, R., 2433, 3944.
Castel, P., Mus, R., and Storck, J. Control of mixtures of antibiotics by electrophoresis on paper,

Castelli, A. See Pristera, F., 4894.
Castiglioni, A. Paper-chromatographic separation of 1- and 2-aminoanthraquinone, 607. chromatographic analysis of 8-hydroxyquinoline -Vioform (iodochlorhydroxyquinoline) mixtures,

and Pilleri, R. Chromatographic separation of geraniol from linalol, 5320.

Castro, M. P. See Paz Castro, M.

Catanzaro, E. J., and Gast, P. W. Isotopic composition of lead in pegmatitic felspars, 4711.

Catino, A., Ceruti, A., and Colombino, J. Microspectrophotometer for u.v. and visible spectra, 830

Catoggio, J. A. Spot-test identification of wrought aluminium and magnesium alloys, 2094.

Catterall, R. See Bark, L. S., 5206.
Cauquil, G., Casadevall, M. A., Casadevall, E., and Greze, M. R. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Ultra-violet spectra of carbonyl derivatives of phenothiazine with the carbonyl group directly attached to the nucleus. Determination of the position of the substituent carbonyl group, 2031.

Cavallaro, L., and Felloni, L. Dielectric determination of moisture in substances insoluble in dioxan. Application to sucrose and to refined sugar, 5426.

Cavallini, D., De Marco, C., Mondovi, B., and Tentori, L. Radioautographic detection of metabolites of DL-[86S]cystine, 3909.

Čavaňák, T. See Dušinský, G., 1637. Cave, W. T. See Pustinger, J. V., jun., 3703. Cavett, J. W. See Heotis, J. P., 3340. Cavina, G., Anselmi, E., Menotti, A., and Natoli, A. Brown's method for the determination of urinary oestrogens, 5388.

and Cingolani, E. Identification and determination of corticoid-like steroids of pharmaceutical interest by paper chromatography, 5389.

Cawley, L. P., Spear, F. E., and Kendall, R. Ultramicro chemical analysis of blood glucose with glucose oxidase, 2876.

Ceausescu, D. Determination of nitrates in water means of back-titration of an excess of indigocarmine with permanganate, 5041.

Cefola, M. See Caso, M. M., 2044, 2784.

Celap, M. B., and Radivojević, Z. Separation of

elements of group 1 by paper chromatography,

Čelechovský, J., and Svobodová, D. Photometric determination of some organic nitrogenous bases,

Cellini, R. F. See Fernandez Cellini, R.

Celso, P. Mazziotti di. Control of the vitamin-A content of vitaminised feeding-stuffs, 757.

Central Electricity Generating Board. Apparatus for measuring the concentration of a component of a gaseous mixture, 4548.

Čepčianský, I., and Chromcová, L. Determination of nitrogen in some heterocyclic compounds, 3790. Cerato, C. C. See Fabrizio, F. A., 3362, and Lawrey,

D. M. G., 281. Cerletti, P., and Ipata, P. Determination of riboflavine and its coenzymes in tissues, 5397.

Cerma, E. See Calzolari, C., 1568. Cerná, J. Method of evaluating the microbiological test for cobalamins, 1892.

Cernatescu, R., Poni, M., and Yorga, N. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] General reaction for alkaloids, 2031.

Cerný, M. See Pacák, J., 3308. Ceruti, A. See Catino, A., 830. Cervinka, V. See Jureček, M., 3806.

Cervos-Navarro, J. See Carcasona, A., 4954.

Cesari, A. See Bucci, F., 730. Cevolani, F. See Crespi, V., 565. Chaiet. A. H., and Chaiet, L. Estimation of vitamin C by agar diffusion, 3523.

Chaiet, L. See Chaiet, A. H., 3523. Chaiken, B. Determination of ignition loss in Portland blast-furnace-slag cements, 1041.

Chaikoff, I. L. See Webster, W. W., 233, and Werbin, H., 5339. Chakrabartty, M. M. See Majumdar, A. K., 157,

Chakravarti, R. P., and Dey, N. K. Estimation of piperazine and its salts by a turbidimetric method, 1555.

Chakravarty, B. See Banerjea, D., 3137, 3629. Challis, H. J. G., and Jones, J. T. Determination of small amounts of tin in copper and its alloys, 1315.

Chalmers, R. A., and Thomson, D. A. Precision burette, 5065.

and Walley, C. A. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Recording spectrophotometric titrimeter,

Chalopin, H. Micro-fractionation on paper of mixtures of cortisone, deoxycortisone, sodium salicylate and amino acids, 716.

Chambers, W. E. See Malmstadt, H. V., 4588. Champeix, L., Derras, R., and Dufio, J. Determina-tion of sodium oxide in sodium. The mercury method: its utilisation in the case of very low concentrations, 1261.

Chan, F. L., and Moshier, R. W. Spectrophoto-metric determination of molybdenum in steel with 3:5:7:3':4'-pentahydroxyflavanone (dihydroquercetin), 3760.

Chance, B., Perry, R., Akerman, L., and Thorell, B. Sensitive recording micro-spectrophotometer,

Chandler, D. See Hollinger, N. F., 1521. Chandra, U. See Wurziger, J., 3513. Chang, H.-Y., and Yeh, Y.-H. Iodimetric determination of thallium, 2101.

Chang, S.-L. Non-aqueous titration of a new non-mercurial diuretic—chlorothiazide (6-chloro-7-sulphamoylbenzo-1; 2; 4-thiadiazine 1; 1-dioxide),

Chang, T.-C. L., and Karr, C., jun. Gas-liquid chromatographic analysis of aromatic hydrocarbons boiling up to 218° in a low-temperature coal-tar, 3364.

Chang, Y .- C., and Fan, L.-T. Determination of reflux ratio and boil-up rate for distillation column with intermittent take-off-type reflux control, 293.

Chao, S.-H. See Lee, T.-C., 139.
Chao, T.-H. See Lee, P.-T., 2201.
Chaphekar, M. R., and Gore, T. S. Micro-determination of unsaturation in organic compounds, 1052. Chapman, D. Infra-red spectroscopic characterisation of glycerides, 5443.

Chapman, R. A. See Genest, C., 1569. Charalampous, F. C. See Kean, E. L., 4925. Charles, D. F. Refractive indices of pure sucrose solutions, 2273.

Charlet, L. See Mathien, V., 1755. Charnicki, W. F., Bacher, F. A., Freeman, S. A., and DeCesare, D. H. Chlorothiazide (6-chloro-7-sulphamoylbenzo-1:2:4-thiadiazine 1:1-dioxide): a new orally effective diuretic agent, 3484.

Chase, D. L. See Lathouse, J., 1740. Châtelet, M., Nicaud, C., and Tridot, G. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Determination by u.v. emission spectrography of trace elements in mineral compounds, 2031.

Chaterjee, P. K., Banerjee, D., and Surcar, A. K. Ouantitative determination of thiazole-type rubber accelerators by amperometric titration,

5333

Chatten, L. G., and Levi, L. Identification and differentiation of sympathomimetic amines, 1901. Pernarowski, M., and Levi, L. Identification and determination of some official local anaesthetics as tetraphenylborates, 720.

Chatteriee, K. K. Ultra-violet absorption spectra of 1-nitroso-2-naphthol and its copper chelate,

Chayen, M. See Lacroix, Y., 5222.
Chayen, R. See Potter, R. S., 4556.
Chedru, J. See Cartier, P., 1112.
Chen, J.-L. See Chou, Y.-Y., 4458.
Chen, P. T. See Rappoport, D. A., 4929.
Chen, Y.-M. Separation of metals by ion-exchange

resins. III. Separation of UX, from uranyl nitrate by the nitrate elution method, 499.

- and Wong, C.-M. Ion-exchange method for the separation of radium-228, actinium-228. lead-212 and bismuth-212 from thorium nitrate,

See Baranov, V. I., 5160.

Cheng, F. W. Rapid method for the micro-determination of halogen in organic compounds, 3286. Cheng, H. H., and Kurtz, L. T. Elimination of manganese interference in the EDTA titration of

exchangeable soil magnesium, 4522. Cheng, Hwasheng. See Pan, K., 2080.

Cheng, K. L. Analytical applications of xylenol orange. II. Spectrophotometric study of the orange. zirconium - xylenol orange complex, 1324; III. Spectrophotometric study of the hafnium-xylenol orange complex, 2677; IV. Spectrometric study of the ferric-xylenol orange complex, 3746. Determination of aluminium in high-temperature alloys, 2093. [International Symposium on Microchemistry. Birmingham, 1958.] CHEL-242 as a new complexing agent in titration and in masking, 3102. Photometric determination of cobalt in nickel alloys and steel,

Cheng, L.-P., and Hsu, Y.-S. Analysis of Cs to Cs saturated hydrocarbons by gas - liquid chromato-

graphy, 174. Chenley, R. B. See Hunter, G. J., 500.

Chepelevetskii, M. L. See Krotova, I. K., 947, and

Vinnik, M. M., 989. Cherkashina, T. V., and Vladimirova, V. M. Analytical chemistry of gallium, indium and thallium, 3165.

Cherkasov, N. Kh. See Pozdeeva, A. G., 2836. Cherkesov, A. I., and Zhigalkina, T. S. Photometric method of determining vanadium in steel, 142.

Chernikhov, Yu. A., Luk'yanov, V. F., and Knyazeva, E. M. Photometric determination of zirconium in phosphorites with catechol violet, 440.

Luk'yanov, V. F., and Kozlova, A. B. Analytical chemistry of thorium. I. Complexometric determination of thorium in monazite concentrates, 2680.

Chernikhov, Yu. A., Tramm, R. S., and Pevzner, K. S. Determination of tantalum in niobium, 96.

— See also Malyutina, T. M., 4778.
Cherny, F. See Andreev, A. S., 3269.
Chernysheva, A. M. See Ivanova, E. A., 530.
Chernysheva, N. V. See Bochkova, O. P., 2058.
Cheronis, N. D. [Progress in microchemistry.]

Qualitative organic analysis, 2033.

Chess, W. B., and Bernhart, D. N. Quantitative determination of traces of pyrophosphate in orthophosphates. II, 88.
- See also Bernhart, D. N., 87.

Cheung, H. C. See Carroll, B., 4414. Cheung, H. L. See Reiner, M., 1517. Chiamori, N., and Henry, R. J. Ferric chloride method for the determination of total cholesterol and cholesterol esters, 1147.

 See also Henry, R. J., 1527, 2366.
 Chiang, M.-T., and Bobalek, E. G. Infra-red determination of ratio of trans to cis isomers in polyesters prepared from maleic or fumaric acid, 2854.

Chiarlo, B. Microchemical test for the identification of manna, 715.

Chiccarelli, F. S., Woolford, M. H., jun., and Avery, M. E. Spectrophotometric assay for chlortetracycline hydrochloride and tetracycline hydro-

chloride in pharmaceuticals, 712.

Chihara, G., and Tanikawa, K. Analysis of compounds containing heavy nitrogen (nitrogen-15)

by infra-red absorption spectra, 3422.

Child, K. J. See Bedford, C., 1483.

Childs, C. E., and Henner, E. B. Determination of occluded solvent in organic compounds, 4801. Childs, W. A. See Strickland, R. D., 1511, 1513, 4433, 4953.

Chillemi, D. See Scoffone, E., 2031, and Turco, A., 2031.

Chin, H. P. See Michaels, G. D., 2407. Chioffl, V. Determination of egg content in "pasta all'uovo," 5016. Chiorboli, P., and Gualandi, C. Raman spectra of

hexachlorocyclohexane isomers and the quantitative determination of the y-isomer, 1076. Chipault, J. R., and Hawkins, J. M. Determination

of conjugated cis-trans and trans-trans methyl octadecadienoates by infra-red spectrometry, 4495.

Chirigos, M. A., and Udenfriend, S. Fluorimetric procedure for determining salicylic acid in biological tissues, 3401.

Chirkov, S. K. Analysis of solutions of alkali phenoxides, 3817.

and Studenskaya, L. S. Amperometric determination of molybdenum in steel by means of fixed electrodes, 2235.

[International Symposium on Chirnside, R. C. Microchemistry. Birmingham, 1958.] Analytical problems in the electrical industry: the applications of micro-techniques, 3102.

- and Still, J. E. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Temperature effects in flame photometry, 2031.

 See also Thompson, H. V., 1674.
 Chistoni, G., and Zappoli, R. Quantitative determination of neuraminic acids in cerebrospinal fluid, 1873.

Chiu, J. See Juvet, R. S., 3780.

Chizhikov, A. I., and Boyarshinov, V. K. Determination of hydrogen in metals with tritium,

Chleck, D. J. See Ziegler, C. A., 3067. Cho, A. K., Haslett, W. L., and Jenden, D. J. Titrimetric method for the determination of creatine phosphokinase, 5393.

Choguill, H. S., and Bissing, D. E. Separation of halogenated phenols by paper chromatography,

Choi, R. P. See Kuramoto, S., 268.

Chomse, H., and Arend, I. Microchemical detection of phthalic acid, 2799

Chopin, G. R. Ion-exchange studies of the actinide elements, 64.

Chou, S.-C., and Goldstein, A. Chromogenic groupings in the Lowry protein determination,

Chou, Y .- Y., Chen, J.-L., and Hsü, J.-C. Complexometric titration in analysis of organic pharmaceuticals. III. The assay of mepacrine and its preparations, 4458.

Choudhury, R. B. R. Estimation of unsaturation and oils using hypochlorous acid,

and Arnold, L. K. Determination of the neutral oil content of crude vegetable oils, 5444.

Chovin, P. See Buzon, J., 1995.

Chowdhury, D. K. Qualitative and quantitative determination of fatty acids in dehydrated castor oil by paper chromatography, 2998.

Christensen, H. E. See Dominguez, A. M., 5341. Christian, J. E. See Breckinridge, C. E., jun., 5306, and Kaiser, D. G., 3488.

Christman, D. R., and Paul, C. M. Gas-proportional counting of carbon-14 and tritium, and the dry combustion of organic compounds, 3783.

— See also Paul, C. M., 3783.

Chromcová, L. See Čepčianský, I., 3790.

Chudinova, N. N. Amperometric titration of gallium with EDTA (disodium salt) in the presence of phosphate, 2647.

Chudinovskikh, A. V. See Rodinov, V. M., 3914. Chuiko, V. T. See Lotareva, V. I., 524. Chukina, T. P. See Skornyakov, G. P., 1372. Chulanovskii, V. M. See Tsekhovol'skaya, D. T., 5192.

Chulkov, Ya. I. Titrimetric determination of chlorine in organosilanes, 2256. Lead tetra-Titrimetric determination of acetate method of determining small amounts of water in polyorganosiloxane liquids, Complexometric determination of titanium in n-butyl titanate, 4713. Determination of silicon in poly(alumino-organosiloxane) resins, 4891. Complexometric determination of aluminium in poly(alumino-organosiloxane) resins, 5329.

Chulski, T. Spectrophotometric determination of tolbutamide in plasma, 209.

Chun, H. See Pietzka, G., 305. Chundela, B., and Janák, J. Determination of ethanol in blood by means of gas chromatography,

Chuprik, V. F. See Efros, S. M., 899. Churaček, J. See Jureček, M., 3806.

Chwastowska, J. See Struszynski, M., 549. Chzbigy, S. See Morachevskii, Yu. V., 1308. Chzhou-Sii, Muratov, F. Sh., and Novoselova, A. V. Determination of beryllium oxide in copperberyllium alloy, 3142.

Ciaccio, L. L. See Missan, S. R., 3948. Ciccarone, P. A., Thomas, G., and Verly, W. G. Determination of tritium in a proportional

counter. II. Preparation of samples, 3129.
Ciecierska-Stoklosa, D., Gorczyńska, K., Świętosławska, J., and Waledziak, H. Method of "replacing extinction coefficients" in the spectro-photometric analysis of binary mixtures. I. Application for determining traces of metals by means of colour reactions, 4226.

- See also Gorczyńska, K., 4226, and Waledziak, H.,

Cieplinski, E. See Brenner, N., 5092.

Cieślik, S. See Kemula, W., 4129, 5154, 5255. Cifka, J. See Habersbergerová-Jeničková, A., 3292. Cima, L., and Fassina, F. Detection and urinary elimination of phenaglycodol, 1845. Cincotta, J. J. Colorimetric determination of

phosphate in sugar products, 5011.

Cingolani, E. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Spectrophotometric analysis of coumarinic derivatives, 2031.

and Gaudiano, A. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Chemical determination of prednisone and prednisolone in pharmaceutical preparations, 2031

— See also Cavina, G., 5389. Cinková, O. See Jančík, F., 2293. Cintra, A. B. V. See Höxter, G., 3409. Cirillo, V. A. Analysis of a rubber mixture, 2351.

 See also Brown, R. A., 2029.
 Citron, I., and Underwood, A. L. Infra-red determination of traces of sulphate in reagent chemicals, 5221.

Citron, M. See Zahnd, H., 5074.

Ciuhandu. G. Determination of traces of carbon monoxide in hydrogen, 4698.

and Krall, G. Photometric determination of traces of carbon monoxide in the presence of hydrogen, 2114. Photometric determination of traces of carbon monoxide in hydrogen, 3678.

and Rocsin, M. Photometric determination of arsenic, 3704. Determination of antimony, 5209. Civera, M. Spectrographic analysis of solutions derived from the decomposition of lead and zinc ores, 2248.

Clabaugh, W. S., and Jackson, A. Separation and determination of phosphate, silicate and arsenate,

Clair, E. G., and Nair, N. C. Analysis of phenobarbitone and acetylsalicylic acid mixtures using ionexchange resins, 3481.

Clarey, D. H. See Gray, P. R., 3299.

Clark, A. Scanning of paper electropherograms after protein dyeing with bromocresol green, 4067.

Clark, E. L. See Porter, C. W., 2412.
Clark, K. G., Yee, J. Y., Lundstrom, F. O., and Lamont, T. G. Activity-index procedure for determining the quality of the water-insoluble nitrogen in mixed fertilisers containing ureaformaldehyde compounds, 1961.

Clark, L. C., jun. See Beckman Instruments Inc., 4609.

Clark, R. E. D., and Neville, R. G. Toluene-3:4-dithiol and its derivatives as analytical reagents: a new approach to qualitative inorganic analysis,

Clark, R. T. Polarographic determination of small amounts of tin and lead in zirconium and its alloys, 5188.

Clark, S. J., and West, P. W. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Spectrophotometric determina-tion of thallium with malachite green, 2031.

Clarke, E. G. C. Identification of phenazocine 2-hydroxy-5: 9-dimethyl-2-phenethyl-6: 7-benzomorphan], a potent new analgesic, 1547. Use of antazoline for identifying nitrate and nitrite, Microchemical identification of some atropine-like drugs, 2922. Microchemical identi-

fication of some modern analgesics, 5414. Clarke, F. J. P., and Garton, W. R. S. Grating spectrophotometer for the Schumann ultra-violet

range, 2558.

Clarke, J. R. See Branson, J. J., 3103. Clarke, M. F. Lactobacillus casei and Lb. plantarum as test organisms in pantothenic acid estimation, 1182.

Clarke, W. E. Solvent extraction in ferrous analysis, 2722. Methods of slag analysis, 3778.

Classen, L. J. See Wharton, F. D., jun., 1945.

Claudy, H. N., Karasek, F. W., Ayers, B. O., and Skinner, J. G. Automatic sulphate ion analyser,

Clavé, A.-M. See Séris, G., 4059, 4747.

Claver, G. C., and Murphy, M. E. Polarographic determination of residual vinyl cyanide in polymeric systems, 2339.

Clayton, G. W. See Guillemin, R., 692. Clayton, M. M., Adams, P. A., Mahoney, G. B., Randall, S. W., and Schwartz, E. Micro-methods for the determination of chylomicron counts, fatty esters, lipid phosphorus and cholesterol in blood serum, 1500.

Cleverley, B. Determination of unconjugated trans unsaturation in C18 acids and esters from natural

sources, 4011.

Clifford, A. F., and Olsen, R. R. Determination of p-phenylenedilithium by potentiometric titration with cerium^{IV} nitrate solution, 2805. Analytical chemistry of organometallics. Quantitative determination of organoalkalis, 4803.

Clingman, W. H., jun., and Hammen, H. H. Determination of hydrocarbon oxidation products. Reverse isotope dilution analysis, 4818.

See also Barber, H. H., jun., 3314.

Clinton, O. E. Apparatus for porous-cup spark analysis, 825.

— See also Allan, J. E., 2012. Clotten, A. See Clotten, R., 3425. Clotten, R., and Clotten, A. Method for determining

xanthurenic acid after fractionation of urine by high-tension electrophoresis, 3425.

Coal Industry (Patents) Ltd. Apparatus for detecting carbon monoxide, 4597

See Brenner, N., 5092. See Sterling, G. B., 2352. Coates, V. J. Cobler, J. G. See Pinto Coelho, A.

Coelho, A. P. Coelho, F. P. Cogbill, E. C. See Pinto Coelho, F. Cogbill, E. C. See Wartman, W. B., jun., 2425. Coggeshall, N. O. See Matthews, J. S., 166.

Cohen, C. J.

See Kane, P. F., 4534.
[Symposium on catecholamines.] Cohen. G. Techniques to improve the specificity of the trihydroxyindole procedure, 4938.

 Cohen, H. P. See Logothetis, J., 1993.
 Cohen, I. R., and Altshuller, A. P. Spectrophotometric determination of primary nitroparaffins by coupling with p-diazobenzenesulphonic acid,

Cohen, L. Determination of free and total choline in serum and its application to the partition of serum phospholipids, 220.

Cohen, M. M. See Bobtelsky, M., 4991, 5400. Cohen, P. P. See Brown, G. W., jun., 1882. Cohen, S. See Young, J. G., 4469.

Cohen, S. I. Determination of arginine released in human blood plasma after plasminogen activation.

Use of a cation-exchange resin, 4950.
Cohn, V. H. See Shore, P. A., 3424.
Cokelet, G. See Reamer, H. H., 1601.
Colas, M. C. See Perlès, R., 3880.
Colbassani, P. J. See Corey, R. C., 429.
Coldwell, B. B. Application of ultra-violet light

and diphenylamine to spot tests for explosives, 2865.

Cole, E. B. See Barnard, D., 1074. Cole, J. R., Knox, J. O., and Picchioni, A. L. Purification of formamide for chromatographic use. 1199.

Cole, L. G., Czuha, M., Mosley, R. W., and Sawyer, D. T. Continuous coulometric determination of parts per million of moisture in organic liquids, 3283.

Coleman, H. J. See Thompson, C. J., 4811. Coleman, R. F. Isotopic determination of lithium

by neutron activation, 5146.

and Perkin, J. L. Apparatus for the routine determination of the oxygen content of beryllium. metal by activation, 4137.

Collins, A. G., and Watkins, J. W. Spectrophotometric determination of iodides and bromides in oil-field brines, 995.

Collins, P., and Diehl, H. Determination of iron in urine using 4:7-diphenyl-1:10-phenanthroline [bathophenanthroline], 2362. Determination of iron in wine using 2:4:6-tri-(2-pyridyl)-sym.triazine, 4489.

Diehl, H., and Smith, G. F. 2:4:6-Tri-(2pyridyl)-sym.-triazine as a reagent for iron. Determination of iron in limestone, silicates and

refractories, 2730.

Colloca, C. M. See Morani, V., 2474, 5446.
Colombié, M. See Bastien, P., 3084.
Colombio, J. See Catino, A., 830.
Colombo, P., Corbetta, D., Pirotta, A., Ruffini, G. and Sartori, A. Solvent for quantitative and qualitative determination of sugars using paper chromatography, 5354.

Colson, A. F. [International Symposium on Micro-Birmingham, 1958.] Micro-deterchemistry. mination of nitrogen by a simple modification of the Pregl - Dumas method and some observations on methane as a source of error, 3102.

Comboli, D. See Armeanu, V., 999. Comte, M. See Bernanose, A., 2031.

Condon, R. D. Design considerations of a gaschromatography system employing high-efficiency Golay columns, 2536.

Conduit, C. P. Ultra-violet and infra-red spectra of some aromatic nitro compounds, 3342.

Conklin, D. B. See Robinson, R. H., 1659.

Connally, R. E. Uranium analysis by gamma absorptiometry, 3726.

Connerty, H. V., Briggs, A. R., and Eaton, E. H., jun. Method for the fixation of paper electropherograms, 1146.

Connolly, R. J. See Haycock, R. P., 1968. Connor, J., and Bass, S. T. Amorphous carbon electrodes in high-voltage a.c. arc excitation, 3564.

 See also Bass, S. T., 4073, 4520.
 Connors, K. A., and Higuehi, T. Spectrophotometric detection of the end-point in the Karl Fischer titration of water, 3621. Photometric detection of the end-point in the Karl Fischer titration of water, 3621. indicator titration of weak bases in acetic acid. The modified type-II plot, 3809.

Conrad, A. L., and Evans, J. K. Methods for the analysis of petroleum cokes, 3363. Determination of platinum, sulphur and chlorine in platinum

reforming catalysts, 3772.
- See also Vigler, M. S., 2827.

Consalvo, V. F. See Rynasiewicz, J., 1299. Conti, L. See Magiorelli, E., 5004.

Conti, L. See Magiorelli, E., 5004. Conti, M. L. See Bovalini, E., 1300, and Valentini,

G., 1297.

Cook, A. H., and Hitchins, R. G. Differential microdensitometer, 2554.

Cook, E. R., and Luscombe, M. Fractionation and estimation of free amino acids in serum, 3900.

Thomas, D. P. P., and Dingle, J. T. Studies on synovial tissue. VII. Determination of concentrations of creatine and phosphocreatine in synovial tissue, 4940.

Cook, H. D. See Moses, A. J., 3103.

Cook, S. See Gold, E. M., 4439. Cooke, A. C. Separation and identification of food colours, 1922.

Cooke, N. J. See Hansen, R. P., 272. Cooke, W. E. See Godard, H. P., 4159. Coomber, D. I., and Rose, B. A. Reaction of bases with chloroform, 3301.

Cooney, B. A., and Saylor, J. H. Polarographic determination of mixtures of aluminium and gallium, 2097.

Cooper, F. P. See Bishop, C. T., 4413. Cooper, J. A., Canter, R., Estes, F. L., and Gast, J. H. Apparatus for the equilibration of columns prior to use in vapour-phase chromatography, 4057.

Cooper, S. R., and Fowlkes, O. F. Cathodic action of the phenylenediamine dihydrochlorides at the dropping-mercury electrode, 3821.

Cooper, S. S. See Hibbits, J. O., 2568. Cooperman, J. M., Luhby, A. L., Teller, D. N., and Marley, J. F. Distribution of radioactive and non-radioactive vitamin B12 in the dog. Determination of vitamin B₁₂, 3886.

Copeland, L. E., Brunauer, S., Kantro, D. L., Schulz, E. G., and Weise, C. H. Quantitative determination of the four major phases of Portland cement by combined X-ray and chemical analysis, 1769.

Coppi, G. See Bolognani, L., 660. Coppini, D., Benassi, C. A., and Montorsi, M. Quantitative determination of tryptophan metabolites via kynurenine in biological fluids,

Corbin, E. A., Schwartz, D. P., and Keeney, M. partition chromatography. Liquid - liquid Separation of the 2:4-dinitrophenylhydrazones of saturated aldehydes, methyl ketones, 2-enals and 2:4-dienals, 5278.

Corcoran, B. J. See Buchanan, D. L., 2251. Cords, H., and Ratyez, O. T. Quantitative deter-

mination of cyanocobalamin, 1543.

Corey, R. C., Myers, J. W., Schwartz, C. H., Gibson, F. H., and Colbassani, P. J. Occurrence and determination of germanium in coal ash from power plants, 429.

Corneld, M. C., Dilworth, S., Fletcher, J. C., and Gibson, R. Machine for the automatic chromatography and assay of mixtures of radioactive

substances, 2521.

Corish, P. J. Identification and analysis of polyurethane rubbers by infra-red spectroscopy, 1464. Analysis of cis- and trans-1:4 contents of polyisoprenes by near-infra-red spectroscopy, 2863

Cormier, M., Jouan, P., and Girre, L. Separation of lipids by chromatography on paper impregnated with silicic acid. II. Possibilities and limitations of the method, 2886.

Corner, M. [International Symposium on Micro-chemistry. Birmingham, 1958.] Errors in chemistry. weighing not inherent in the balance, 3102.

Cornides, I. Mass-spectrometric analysis of gas mixtures containing molecules of identical mass number, 3594.

Cornil, J. See Lheureux, M., 1695.

Infra-red absorption spectra in the caesium bromide region (15 to 35 microns). I. Hydrocarbons, 1407.

Cosens, G. R. See Zweig, G., 3012.

Costa Finzi, A. M. See Vitali, T., 608. Costantinides, G., Arich, G., and Lomi, C. Determination and behaviour of porphyrin aggregates in petroleum residues and bitumens, 2826.

Cotta-Ramusino, F., and Intonti, R. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Spectrophotometric determination of quinine salts and of procaine penicillin, 2031.

See also Intonti, R., 745, 1925, 5437.

Cotton, T. M., and Woolf, A. A. Micro-determination of gold with p-dimethylaminobenzylidenerhodanine, 4134.

Coufalik, F., and Svach, M. Separation of rhodium from platinum with the aid of ion-exchange resins,

Coulombeau, J., and Jaudon, E. Dumas technique for the determination of traces of nitrogen in cast iron and steel, 4282.

Coulson, C. B., Davies, R. I., and Luna, C. Quantitative paper chromatography of inorganic ions in soils and plants, 5045.

Coulter, S. T. See Kuramoto, S., 268. Courchaine, A. J., Miller, W. H., and Stein, D. B., jun. Semi-micro procedure for estimating free and total cholesterol, 4973.

Courtecuisse, S. See Morpain, R., 2023.

Courts, A. Distribution of mucoprotein in gelatins and fractionated gelatins. Determination of mucoprotein, 3918.

Cousins, F. B. Fluorimetric micro-determination of selenium in biological material, 4403.

Covell, D. F. Determination of y-ray abundance directly from the total absorption peak,

Covello, M., and Vena, C. de. Spectrophotometric determination of thioctic acid, 3416.

Coven, G., and Cox. R. [Review of fundamental developments in analysis.] Chemical microscopy, 5125.

Cover, R. E. See Baumgarten, S., 20.

Cox, C. P., Hosking, Z. D., and Posener, L. N. Relations between composition and viscosity of cows' milk, 737.

Cox, F. See Ware, A. G., 1525. Cox, J. D. See Adey, K. A., 1086. Cox, J. E. See McIntosh, J. J., 5170. Cox, R. See Coven, G., 5125.

Cox, R. I. Separation and quantitative estimation pregnane-3α: 17α: 20α-triol, 3α: 17α: 20αof trihydroxy-5β-pregnan-11-one and other urinary acetaldehydogenic steroids, 1879.

Cozzi, D., and Raspi, G. Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Determination of vanadium spectrophotometrically in non-aqueous solution, 2031; Complexes of indium with organic acids, 2031.

Crable, G. F. See Kearns, G. L., 2322. Craciuneanu, R. See Popper, E., 1267. Craig, B. M., and Murty, N. L. Quantitative fattyacid analysis of vegetable oils by gas - liquid chromatography, 4492.

Cramer, K., and Isaksson, B. Evaluation of the Theorell method for the determination of total serum or plasma cholesterol, 4437.

Crane, R. A. See Voeks, J. F., 3025. Crawford, N. Determination of serum α - and β lipoprotein cholesterol, 1148.

Creasey, N. H., and Green, A. L. 2-Hydroxyiminomethyl-N-methylpyridinium methanesulphonate (P2S), an antidote to organophosphorus poisoning. Its preparation, estimation and stability, 2442.

Crépy, O. See Jayle, M. F., 3450.

Crespi, V., and Cevolani, F. Gas-chromatographic analysis of C1 to C4 hydrocarbons by magnesium silicate, 565.

Crespo, V. P. See Pereira Crespo, V. Crew, M. D. See Richards, E. W. T., 980, 1211.
Crighton, J., Holliday, A. K., Massey, A. G., and Thompson, N. R. Quantitative de-alkylation of alkylboron compounds by carboxylic acids, 4837.

Crisan, I. See Liteanu, C., 1301.
Crister, R. O., and Benford, C. L. Analysis of ionones and methylionones by gas-liquid parti-

tion chromatography, 1810.

and Burrill, A. M. Determination of hydroxyl value of alcohols by near-infra-red spectroscopy,

See also Fenton, A. J., jun., 3514.

Critchfield, F. E. Determination of a \(\beta\)-unsaturated acids and esters by bromination, 1418.

Crokaert, R. Excretion of allantoin and its derivatives in the rat and in man. Determination of allantoin by chromatography, 2888.

Crook, E. M., Mathias, A. P., and Rabin, B. R. Spectrophotometric assay of bovine pancreatic ribonuclease by the use of cytidine 2':3'-phosphate, 4445.

Croon, H. See Croon, W., 821. Croon, W., and Croon, H. Physico-chemical methods for the determination of optimum conditions in

paper electrophoresis, 821.

Cross, A. H. J., McClaren, D., and Stevens, S. G. E. Spectrophotometric determination of certain alkaloids and application to pharmaceutical preparations, 3463.

Crossland, I. Chromatographic determination of

ascorbic acid, 5465.

Crosti, P. F. Fluorescence reaction for the determination of 5-hydroxytryptamine by paper chromatography, 221.

Crouch, E. A. C., and Swainbank, I. G. [International Symposium on Microchemistry. Birmingham, 1958. Separation of fission products on ion-exchange micro-columns, 3102.

Crout, J. R. [Symposium on catecholamines.] Some spectrophotofluorimetric observations on blood and urine catecholamine assays, 4938.

Crouthamel, C. E., and Rathbun, E. R., jun. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Absolute calibration of sodium iodide crystals for scintillation spectrometry and their application to reactor analytical problems, 2031.

Crowe, P. F. See Hornstein, I., 3521, 5032. Crowel, E. A. See Guymon, J. F., 1573. Crutchfield, C. A., and Sloviter, H. A. Determination

of glycerol in blood - glycerol mixtures, 2367. Csányi, L. J., Solymosi, F., and Szücs, J. Reaction between cerium IV ions and peroxysulphuric acid,

Csapo, F., and Repetschnig, H. Determination of germanium in germanium-rich material, 4708.

Csik, J. See Solymosi, F., 4638.

Cullen, T. J. Potassium pyrosulphate fusion technique. Determination of copper in mattes and slags by X-ray spectroscopy, 4666. Cummings, W. G. See Central Electricity Generating

Board, 4548.

Cundiff, R. H., and Markunas, P. C. Determination of strong acid mixtures, 868. Non-aqueous determination of inorganic salts, 1250.

See also Robinson, W. T., jun., 4324.
 Cunningham, J. A. P. See Boreham, G. R., 1808.
 Cunningham, L. W., and Nuenke, B. J. Reaction of iodine with proteins. Determination of mercapto groups; 1509.

Cupr, V., and Pelikán, J. B. Measurements without calibration curves, 1233.

Curien, H. See Allais, G., 909. Curautte, B., jun. See Winter, W. K., 3826. Curry, A. S. Identification of barbiturates, 252. Isolation and detection of ergometrine in toxicological analysis, 1539.

Cusani, P. See Flatt, R., 1726.
Custer, J. H. See Geller, J. H., 5379.
Cuta, F., and Borecký, J. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Fluorimetric determination of 2:8-, 2:7-, 2:6- and 2:5-isomers of naphthylaminemonosulphonic acids, 2031.

Novotný, L., and Vojta, Z. Modification of the

Bruhns method for the standardisation of alkali

hydroxide solution, 4099.

Cuttitta, F., and Daniels, G. J. Determination of trace amounts of uranium in zircon, 486.

and White, C. E. Spectrophotometric study of the magnesium - NN'-di(salicylidene)ethylenediamine system, 3147.

See also White, C. E., 3146.

Cuzzocrea, G., and Lamonica, G. Copper salts in the spectrophotometric determination of amino acids, 4946.

Cuzzoni, M. T., and Lissi, T. P. Estimation of the meat-extract content of commercial extracts and

cubes, 4473.

Cvrkal, H., and Janák, J. Application of gas chromatography to the identification of some terpenes present in the essential oils from conifers,

Cygański, A. Separation of bismuth from mercury by the ammonia method, 459.

Cynkin, M. A., and Ashwell, G. Estimation of 3deoxy sugars by means of the malonaldehyde thiobarbituric acid reaction, 5276.

Cyrankowska, M. See Zagórski, Z., 28, 2192, 2193. Czakow, J. Spectral analysis by the powder-sifting method. I. Technique, 3568.
Pszonicki, L., and Walewska, Z. Spectrographic

determination of impurities in uranium oxide by means of carrier distillation, 495.

Radwan, Z., and Strzyżewska, B. Spectrographic determination of uranium in ores and residues after leaching, by using the sifter method

in an a.c. arc, 4248.

and Steciak, T. Method of determination of traces of boron in graphite and coke by means of

spark spectrography, 910.
- and **Weźranowski, E.** Spectrographic determination of traces of lithium in metallic calcium by means of a spark discharge, 896.

Czarnecka, W., and Sobkowska, A. Polarographic determination of lead in ascorbic acid medium,

Czerwińska-Fejgin, E. See Woliński, J., 4356. Czerwiński, W. Potentiometric control of the

separation of acids on ion-exchange columns, 304. Spectrophotometric determination of the nitrile of isonicotinic acid by the colour reaction with sodium nitroprusside, 1087. Determination of isonicotino- and nicotino-nitriles in mixtures obtained after oxidation of picoline bases with ammonia, 2817.

Czuha, M. See Cole, L. G., 3283.

D

Daalder, A. See Boef, G. den, 456, 4241. DaCosta, F. M. See Mitoma, C., 3431. D'Addabo, A. See Addabo, A. de. D'Agostino, O. See Busellu, M. A., 4301.

Dahlem, T. See Klumb, H., 4020. Dahmen, E. A. M. F. See Meurs, N. van, 1419, 1798, 3313.

Dahn, H., Moll, H., and Menassé, R. Determination of oxygen isotopes in organic compounds, 1048.

Daiev, C. See Jordanov, N., 60.

Dale, B. McS. Determination of arsenic, gold and cobalt in biological tissues, 1474.

D'Alessandro, B., Brancaccio, A., and Jacono, G. Determination of 17-oxosteroids, dehydroepiandrosterone and androsterone in plasma and urine, 3455.

Brancaccio, A., and Pedicini, S. Determination of serum cholesterol, 3449.

See also Brancaccio, A., 2906, 2907, 2910, 3453, 3457.

Dalton, J. C., and Welch, G. A. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956. Rapid separation and determination of radio-strontium and radio-caesium in

fission product mixtures, 2031.

Daly, E. F. See Tarbet, C. S. C., 833.

Daly, J. W. See Weissbach, H., 5390.

Dalziel, A. M. See Baumgartner, W. E., 1495.
Damaschke, K., and Saling, E. Clinical method for measuring dissolved and bound oxygen in blood electrochemically, 4895.

Dancewicz, D. See Kemula, W., 356.

Daniel, H. See Simon, H., 564.
Daniel, R. L., and LeBlanc, R. B. Polarographic determination of nitrilotriacetic acid in EDTA,

Daniels, G. J. See Cuttitta, F., 486.

Danielsson, A., Lundgren, F., and Sundkvist, G. Tape machine. I. A new tool for spectrochemical analysis, 306.

and Sundkvist, G. and **Sundkvist**, **G.** Tape machine. II. Applications using different kinds of isoformations, 306; III. Useful corrections in spectrochemical analysis with the tape technique,

Danielsson, B. See Schill, G., 2292.

Determination of boron with L. 1:1'-dianthrimide, 3656. Determination of boron in iron and low-alloy steels with 1: 1'-dianthrimide: a colorimetric method that does not require preliminary separations, 3749.

Danielsson, N. A. Improvements in or relating to apparatus for making spectral analysis of pul-

verised materials, 829.

Dannenberg, H., Forbes, J. W., and Jones, A. C. Infra-red spectroscopy of surface coatings in reflected light, 4892

Dannley, R. L., and Weigand, B. L. Apparatus for back-washing chromatographic columns with inert solvents, 1197.

Danon, J., and Levi, M. C. Paper chromatography of inorganic ions in nitrate solutions. I. Scandium, yttrium, actinium and the lanthanides, 4176.

Danuschenkova, M. A. See Kabanova, O. L., 3733. Danzuka, T., and Ueno, Keihei. Complexometric titration of aluminium and iron in a binary mixture, 408.

 See also Hayashi, K., 5240.
 Darby, W. J. See Pearson, W. N., 763.
 Darling, D. J., Miller, F. D., Bartsch, R. C., and Trent, F. M. Automatic range changer for Beckman GC-2 gas chromatographs, 4061.

Darr, W. C. See Steingiser, S., 1079.
Darrécamp, C. See Allard, J., 1339.
Das, M. N. See Kundu, K. K., 722, 1246.
Dass, R. See Verma, M. R., 4361.

Dastur, N. N. See Ramachandra, B. V., 5432.

Date, J. W. Quantitative determination of some carbohydrates [xylose, arabinose, glucose, galactose, lactose] in normal urine, 647.

Datta, J. See Bhattacharya, K. R., 3430.

Datta, S. K. Spectrophotometric determination of zirconium with 1:8-dihydroxy-2:1'-azonaphthalene-3:6:4'-trisulphonic acid, 2674. Use of organic reagents in inorganic analysis. IX. Analytical reactions of maleanilic acids, 1644; Determination of thorium with maleanilic acids, 4724; XI. Gravimetric determination of zirconium with maleanilic acids, 4716; XII. Analytical reactions of aryloxy fatty acids, 5128; XIII. Determination of thorium and zirconium with aryloxy fatty acids, 5201. Analytical aspects of some azo dyes from chromotropic acid. VI. Analytical reactions of some SNADNS dyes, 1; VII. Spectrophotometric determination thorium with nitroso-SNADNS, 1327; VIII. Spectrophotometric determination of thorium with 1:8-dihydroxy-2-(5-, 6- and 8-sulphonaphthylazo)naphthalene-3:6-disulphonic acids [SNADNS-5, -6 and -8], 4725; IX. Spectrophotometric determination of thorium with 1:8dihydroxy-2-(2-hydroxy-4-sulphonaphthylazo)-1:8-dihydroxy-2-(8-hydroxy-3:6-disuland phonaphthylazo) - naphthalene - 3: 6 - disulphonic acids [OH-SNADNS and DSNADNS], 4725; X. Analytical reactions of some dyes from sulphonamides, 4631.

Daudel, P., and May, S. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Application of isotopic exchange

reactions in chemical analysis, 2031.

Dauphin, J. See Berger, J.-A., 957, and Dorier, C., Davankov, A. B., and Laufer, V. M. Elution of precious metals from anionites after adsorption, 383. Dave, J. B., and Patel, J. L. Determination of some

oral antidiabetic drugs, 2439.

Dave, J. S., and Talati, A. M. Estimation of palladium by αβ-dioximinoacetoacetanilide [αβdioximinobutyranilide], 1028. Estimation of nickel by αβ-dioximinobutyranilide, 1376. Estimation of nickel and palladium by αβ-dioximinobutyro-o-toluidide, 3268. Determination of copper by a \beta-dioximinobutyranilide, 3630. Estimation of copper and nickel by a B-dioximinoacetoacet-o-chloroanilide [αβ-dioximinobutyroo-chloroanilide], 3633. Determination of palladium by αβ-dioximinobutyro-o-chloroanilide, 3771.

David, D. J. Determination of calcium in plant material by atomic-absorption spectrophotometry,

1843

Davidek, J., and Davidková, E. Influence of flavonoids on the colorimetric determination of L-ascorbic acid with 4-methoxy-2-nitroaniline,

See also Davidková, E., 5015.

Davidenko, P. I. See Tkachenko, N. S., 4775. Davidková, E., and Davidek, J. Indirect polarographic determination of nitrates in biological material, 5015.

— See also Davidek, V., 4016.

Davidova, A. See Bellomonte, G., 1165.

Davidson, E. A. Periodate technique for the identification of sugar phosphates, 2769.

Davidson, F. M. Activation of plasminogen by staphylokinase: comparison with streptokinase. Assay of staphylokinase activity, 4989.

Davidson, J. D. See Mitoma, C., 3431.
 Davidson, R. J., and Steyn, W. J. A. Determination of boron in plant material, 3010.

Davies, B. L. See Healy, T. V., 370.

Davies, I. The reading of calorimeter thermometers. 2573

Davies, R. I. See Coulson, C. B., 5045.

Davis, D. G. Coulometric titration of manganese with electrogenerated vanadyl ion, 1743. Determination of mixtures of iron and cerium by controlled-potential coulometric analysis with a platinum electrode, 1748.

and Ganchoff, J. Chronopotentiometric determinations at solid electrodes. Determination of

manganese in steels, 4283.

and Jacobsen, W. R. Determination of iron and iron - aluminium mixtures by titration with EDTA. 4269.

Davis, D. R., and Budd, R. E. Continuous electro-phoresis of serum proteins, 3437.

Davis, E. N. See Lincoln, A. J., 1384.
Davis, F. F. See Harris, D. N., 4970.
Davis, H. M., and Campbell, J. Versatile lightweight spectrographic source unit, 308.

Davis, P. M. See Sass, S., 4342. Davis, R. B. Serotonin (5-hydroxytryptamine) in normal human serum as determined by an improved method, 2388.

Davis, V. E., and Awapara, J. Method for the determination of some amino-acid decarboxylases,

See also Awapara, J., 3898.
 Davis, W. F. See Hibbits, J. O., 2109, 2128, 4673, 5158.

Davison, A. N. See Adams, C. W. M., 218.
Davydov, A. A. See Kozlov, V. V., 2315.
Dawson, R. M. C. Hydrolytic procedure for the identification and estimation of individual phospholipids in biological samples, 5363.

Day, C. E. Cell arrangement for increased utilisation infra-red spectrophotometers in process of

studies, 2009.

Day, E. A., and Patton, S. Paper chromatography of 2:4-dinitrophenyl sulphide derivatives of mercaptans (thiols) and mercapto acids, 603. De, A. K., and Khopkar, S. M. Thenoyltrifluoro-

acetone as a colorimetric reagent, 339. See also Khopkar, S. M., 3135, 4251, 4693, 4779.

De Almeida, L. See Almeida, L. de.
Dean, J. A. [Symposium on solvent extraction in
the analysis of metals.] Use of organic solvents

in flame photometry, 4643.
See also Carter, J. A., 3233, and Scroggie, L. E., 2083

Dean, S. J. See Gardner, J. E., 4453.

Deane, A. M. Estimation of hydrogen fluoride in mixed-gas systems by infra-red spectroscopy, 4260. De Angelis, G., and Mazzuoli, G. Simultaneous determination of strontium and calcium in urine and serum by flame spectrophotometry, 3869.

Dearden, J. C., and Forbes, W. F. Light-absorption studies. XIV. The ultra-violet absorption spectra of phenols, 1805; XV. The ultra-violet

absorption spectra of anisoles, 1805.

De Barros, M. I. See Barros, M. I. de.

De Bartolomé, A. G. See Garrido de Bartolomé, A.

DeBoer, F. E. See Youngdahl, C. A., 1303. Debras, A. See Debras-Guédon, J., 935. Debras, J. See Debras-Guédon, J.

Debras-Guédon, J., Debras, A., and Voinovitch, I. A. Colorimetric determination of titanium dioxide in

silicates, 935.

and Voinovitch, I. A. Determination of strontium by flame spectrophotometry, 2079. Effect of 8-hydroxyquinoline in flame-spectrophotometric analysis. Direct determination of strontium, calcium, potassium, sodium and lithium in the presence of interfering ions. Emission of aluminium in the presence of 8-hydroxyquinoline, 5162.

Debras-Guédon, J, See also Voinovitch, I. A., 133. De Bruin, H. J. See Bruin, H. J. de. Debska, W., and Kostujak, K. Qualitative an

Qualitative and quantitative assay of tropane alkaloids in drugs and pharmaceutical preparations by means of paper chromatography, 1538.

De Carvalho, R. A. Guedes. See Carvalho, R. A. Guedes de.

Deceare, D. H. See Charnicki, W. F., 3484.

Dechene, E. B. Determination of meprobamate as the dixanthyl derivative, 5417.

Decker, B., McGuckin, W. F., McKenzie, B. F., and Slocumb, C. H. Concentration of hyaluronic acid in synovial fluid, 1489.

Decker, T. S. See Hall, W. K., 2035. Decora, A. W., and Dinneen, G. U. Gas-liquid chromatography of pyridines using a new solid support, 4365.

Dedek, W. Decomposition of radium sulphate with

ion-exchange resins and the separation of lead-210 and polonium from radium, 4678.

Deeleman, P. R., and Van Der Schee, A. C. Determination of the non-volatile content of urea resins,

De Felip, G., Alberti, S., and Lorch, L. von. Titration of antibiotics by means of resazurin, 1894.

De Flines, J. See Flines, J. de.

DeFord, D. D. [Review of fundamental developments in analysis.] Electro-analysis and coulometric analysis, 5125.

De Francesco, F. Spectrofluorimetry of edible oils. II. 275.

De Gori, R., Grandi, F., and Santucci, F. Determination of dyes in solution, 2842.

De Gouveia, A. J. A. See Gouveia, A. J. A. de. DeGraaf, D. E. Heated vapour-absorption cell for infra-red spectroscopy, 5504.

Degrazio, R. P. See Miner, F. J., 4689. De Guili, G. See Turi, C. J., 4378.

De Haas, F. H. See Haas, F. H. de.

Dehority, B. A. Determination of bovine serum

calcium with a simple flame photometer, 635. Paper-chromatographic separation of some antioxidants, 1579.

Deiss, W. P. See Wynn, J., 3435.
De Jesus, J. M. See Jesus, J. M. de.
De Jong, H. G. B. See Jong, H. G. Bungenberg de.
De Jong, K. See Jong, K. de.
DeJong, R. N. See Tourtellottee, W. W., 2406.

De la Gandara, I. J. L. O. See Otero de la Gandara,

De la Maza, M. P. See Pilar de la Maza, M. De Lange, P. W. See Lange, P. W. de. De Langerijt, J. J. A. M. van. See Langerijt,

J. J. A. M. van de.

Delasanta, A. C. See Miles, T. D., 3375.

Del Bianco, F. M., and Trabacchi, G. Extraction and identification of synthetic colours in sugar-

containing foods, 2971. Delcourt, R. Photometric method of determining urea in body fluids, 3411.

Del Frade, I. S. See Frade, I. S. del.

Delga, J., Pallaget, C., and Cariou, J. Techniques of determination of alkaloids contained in belladonna powder, 3465.

Del Gatto, L., Lindgren, F. T., and Nichols, A. V. Ultracentrifugal method for the determination of serum lipoproteins, 1518.

Del Giovane, L. See Antonaci, B. L., 2403. Delhez, R. Ultra-violet absorption spectrum of

water stored in polyethylene bottles, 4654.

De Lippa, M. Z. See Lippa, M. Z. de.

De Lizarduy, M. L. Rexach-M. See Rexach-M. de

Lizarduy, M. L.

Delker, D. A. See Goddu, R. F., 4084.

Dell, J. C. See Steyermark, A., 4809.

Dellinger, H. S. Chromatography in the investigation of colouring matters in foods, beverages and pharmaceutical products, 4479. Method for extracting, concentrating and purifying synthetic acid water-soluble dyes in foods and beverages, 4480.

Deltour, G., Broekhuysen, J., and Dierickx, L. Determination of carnitine in biological media,

Deluca, P. See Souder, J. C., 5423. De Luca, R. See Brancaccio, A., 2907.

De Luca, K. See Brancaccio, A., 2907.

Dema, I. See Voicu, V., 2655, 2740.

De Maio, R. See Smith, L. L., 2908.

De Marco, C. See Cavallini, D., 3909.

Demetrescu, A. See Ionescu, M., 955.

Demetriou, J. A. See Ware, A. G., 1525.

Demey, E. Determination of cortisol and cortisone

in urine by means of acetic anhydride labelled with tritium, 1526.

Demidov, A. A., and Gorbunova, L. B. Spectrographic determination of impurities in high-

purity carbon and graphite, 2116.

Demkin, A. M. See Gokhstein, Ya. P., 2175.

Demoen, P. See Soep, H., 4810.

Dem yanchuk, A. S. Simultaneous determination of carbon and other impurities in steel and pigiron by a spectrographic method, 138. taneous spectrographic determination of carbon and alloying elements in steel, 1009.

and Ryabushko, O. P. Spectrographic analysis of seam weldings of aluminium-magnesium alloys, 3160. Quantitative spectrgraphic determination of boron in seam welds and wearresistant coatings, 3658.

Den Boef, G. See Boef, G. den. Den Boef-Nugteren, J. See Boef-Nugteren, J. den. Denisov, E. I. Determination of aluminium oxide in metallic aluminium, 3665.

Denisov, G. S. See Tsekhovol'skaya, D. T., 5192. Denisov, G. S. See Tsekhovol'skaya, D. T., 5192.
De Nooyer, J. A. See Nooyer, J. A. de.
De Pol, A. van. See Pol, A. van de.
Derby, J. V. See La Mont, B. D., 335.
Der Haak, P. J. van. See Haak, P. J. van der.
Der Kloes, C. J. S.-van. See Schooneveldt-van der
Kloes, C. J.
Der Poel, P. W. van. See Poel, P. W. van der.
Der Pol, E. W. van. See Pol, E. W. van der.
Der Pol, H. J. van. See Pol, H. J. van der.
Derras, R. See Chammeix, L. 1261.

Derras, R. See Champeix, L., 1261. Der Sijde, D. van. See Sijde, D. van der. Der Wegen, T. P. A. van. See Wegen, T. P. A. van

Der Westhuyzen, J. P. van. See Westhuyzen, J. P.

van der.

Desai, H. H. See Anantanarayanan, K. G., 2947. Desbarres, J. See Guérin, G., 4610. Deschamps, J., and Paty, M. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Confirmation by infra-red spectrography of the structures of some 1:4-anthraquinone derivatives, 2031.

Desgrez, P. See Weinmann, S. H., 3452.

Deshmukh, G. S., Anand, V. D., and Vishwanath,
A. K. Conductimetric and pH studies on cobalt tellurite, 3766.

Bapat, M. G., Balkrishnan, E., and Eshwar, M. C. Amperometric determination of metals forming normal selenites, 3122.

and Tatwawadi, S. V. Standardisation of hypobromite, 1652.

Deshmukh, G. S., Tatwawadi, S. V., and Vaikuntam, M. S. Turbidimetric micro-determination of molybdenum with ethylenediamine chloride, 967.

chloride, 967.

— See also Anand, V. D., 3763, 3765, 5252.

Desirant, J. See Pien, J., 4236.

Desneiges, P. Automatic analysis in nuclear technology. I, 5519; II, 5519.

De Sousa, A. See Sousa, A. de.

Desty, D. H., Goldup, A., and Whyman, B. H. F.

Coated capillary columns for gas chromatography in the petroleum industry, 2537.

and Harbourn, C. L. A. Commercial alkylaryl-sulphonate detergent as a column packing for

gas chromatography, 3560.

- Haresnape, J. N., and Whyman, B. H. F.
Construction of long lengths of coiled glass

capillary, 4563.

Détection Électronique Française, La. Apparatus responsive to the composition of a gaseous medium, 2515.

Detert, F. L. See Farley, L. L., 4089.

Detmar, D. A. See Tertoolen, J. F. W., 432.

Dettori, A. G., and Maggi, A. Determination of urinary phenol as an index of exposure to benzene, 2364.

Deutsch, M. J., Pillsbury, H. C., Schiaffino, S. S., and Loy, H. W. Extraction method for adsorbed riboflavine, 4501.

Schiaffino, S. S., and Loy, H. W. Extraction

method for thiamine, 4498 Schiaffino, S. S., and Pillsbury, H. C. Thiamine

in a corn-meal enrichment mixture, 4500. Deutschberger, J., and Kirshbaum, A. Simplified equations for fitting least-square lines to data,

Deutsche Gesellschaft für Fettwissenschaft. Standardised methods for use in the fat and wax industry. XXIX. Analysis of technical fatty acids (2), 4010.

Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Process for determining cyanide concentrations in solution, 5186.

Devani, M. B. See Mehta, C. R., 4465.

De Vena, C. See Vena, C. de.
Deveraux, H. See Martin, A. J., 2745.
De Verdier, C. H. See Verdier, C. H. de.
De Vita, M., Caprioli, G., and Pavan, E. Industria analytical applications of gas chromatography. I. Analysis of impurities in methane, 1057. See also Caprioli, G., 1779.

Devlaminck, F. Determination of benzene in water.

Devlin, T. M. Enzymatic methods in analytical

chemistry, 337.

DeVoe, J. R., Kim, C. K., and Meinke, W. W. Radiochemical separations by amalgam exchange,

- and Meinke, W. W. Radiochemical separations of cadmium, 1290.

Devoti, A., and Sommariva, A. Methods for using spectrophotometry in the analysis of steel. Determination of aluminium, chromium, phosphorus and silicon, 2233.

De Vries, G. See Vries, G. de.
De Vries, J. E., Lauw-Zecha, A., and Pellecer, A.
Polarographic determination of hexaethyldilead in tetraethyl-lead, 3323.

De Vries, M. See Vries, M. de.
De Vries, T. See McEwen, D. J., 1344.
Devyatnin, V. A. See Fedorova, G. A., 4416.
Dewald, A. Complexometric determination of nickel and iron in the same sample by photometric titration, 1026.

De Wet, C. R. See Wet, C. R. de.
De Wet, J. F. See Wet, J. F. de.
De Wet, W. J. See Wet, W. J. de.
Dewey, V. C. See Heinrich, M. R., 764.
Dey, A. K. See Singh, E. J., 4111.
Dey, N. K. See Chakravarti, R. P., 1555.

De Zoeten, E. See Zoeten, E. de.
De Zotti, G. See Zotti, G. de.
Dezső, I., and Fülöp, T. Determination of copper in
blood serum with lead diethyldithiocarbamate,

Dhingra, D. R. See Nigam, I. C., 196. Dhont, J. H. Polarographic method for determining nitrate in meat and meat-curing brines, Polarographic method for determining

nitrite in meat-curing brines, 4481.

— See also Weurman, C., 3557.

Diamond, W. B. See Hilger & Watts, Ltd., 4579.

Diamond, W. J. Water determination in Freon-22 refrigerant by infra-red spectrophotometry, 202.

Dianov, M. P., and Teitel'baum, B. Ya. Photometric picric acid method for the determination of naphthalene in its mixtures with phenol, 4360.

Dibeler, V. H., and Reese, R. M. [Review of fundamental developments in analysis. | Mass spectrometry, 5125.

Di Celso, P. M. See Celso, P. M. di. Di Chiara, G. See Pandolfo, L., 2387. Dick, J. Detection and rapid quantitative determination of amidopyrine in the presence of commonly accompanying substances, 1548.

and Mihai, F. Gravimetric method for the semimicro determination of cobalt and nickel as

diliturate, 1023.

Dickens, P., and Bähr, A. Experience with directrecording spectrographs in the steel-works laboratory. III, 1755. Influence of the form of combination of an element [aluminium] on its determination by emission spectrum analysis, 5174.

Dickman, S. R., and Trupin, K. Ribonuclease assay based on uridine phosphate determination, 241.

Didier, H.-J. See Neuwald, F., 4998.
Dieckert, J. W. See Hamilton, J. G., 235, 236, and
Ory, R. L., 1576.
Diehl, H., and Smith, G. F. Wet oxidation of organic matter employing mixed perchloric and sulphuric acids at controlled temperatures and graded high potentials, 1396. Preparation of sulphatoceric acid for the preparation of standard titrimetric solutions, 2045. International Symposium on Microchemistry. Birmingham, 1958. Role of perchloric acid in macro wet-oxidation of organic matter in the preparation for microdetermination of trace elements, 3102.

See also Collins, P., 2362, 2730, 4489, Kratochvil, B., 4284, Smith, G. F., 1841, 2592, and Trusell, F.,

3250

Diehl, J. F. Quantitative determination of cysteic acid in protein hydrolysates. Rapid paperelectrophoretic method, 1140.

Diehl, W. See Hildebrand, H., 4274. Diemair, W., and Gundermann, C. Determination of potassium and sodium in wine. Comparison of flame-photometric with gravimetric methods, 1930. Determination of formic acid in wine, 2741. Flame-photometric determination of potassium and sodium in wine, 4003.

- and Heiligenthal, A. Determination of hexamine

in foods, 3992.

and Rödder, W. Behaviour of antibiotics in foods. I. Quantitative determination of antibiotics, 5438.

Diemair, W., and Salvisberg, M. Determination of fat in mayonnaise, 2969.

Dierickx, L. See Deltour, G., 4941.
Dierks, R. D. See Scott, F. A., 4572.
Diggle, W. R., and Jardine, G. C. Assay of sulphur and tantalum discs from criticality incident dosimeters, 5143.

Di Ieso, F. See Ieso, F. di.

Dijck, L. A. van, and Simons, L. M. Auxiliary
recorder for the Perkin-Elmer infra-red spectrophotometer, 2005.

Diller, E. R. See Korzenovsky, M., 5391.
Diller, W., Krüger-Thiemer, E., and Wempe, E.
Radio paper chromatography of isoniazid and its metabolites. 1, 1906.

Dilov, Kh., and Georgiev, D. Separation of sugars, amino acids and organic acids with the aid of ion-exchange resins, 2383.

Dilworth, S. See Corfield, M. C., 2521.
Dimbat, M. See Fredericks, E. M., 3049.
Dimitrieva, V. S., and Semenov, S. M. Determination of polymyxin activity by agar diffusion, 475.

Dimitriu, A. Method for the determination of carbonates in soil and rocks. Modification of the Geisler - Maksimyuk alkalimeter, 3016.

Dimler, R. J. See Shaefer, W. C., 2963. Dinerstein, R. A. See Schmauch, L. J., 5093.

Dingle, J. T. See Cook, E. R., 4940.

Dingle, J. T. See Cook, E. R., 4940.

Dingman, J. F. See Arimura, A., 3479.

Dinnerstein, A. See Baker, H., 3884.

Dinnin, J. I. Analysis of chromite and chrome ore,

Dinsmore, H. L. Infra-red micro-spectra of biochemical substances. I. Modification of Perkin -Elmer 12-C spectrometer with microscope for linear wavelength recording at level energy input, 4083.

and Edmondson, P. R. Infra-red micro-spectra of biochemical substances. II. Pressed KBr micro-pellets for use with reflecting microscope,

4083.

Di Perri, T., Ravenni, G., and Rubegni, M. Chromatographic separation of aldosterone, cortisol and cortisone with a double reversed-phase system, 717.

Diplock, A. T. See Edwin, E. E., 4506. Dirkx, I. P., Haak, P. J. van der, and Sixma, F. L. J. Rotation-dispersion measurements with a normal spectrophotometer, 5111.

Dismukes, E. B. Identification of 2-ethylhexyl hydrogen sebacate in di-(2-ethylhexyl) sebacate,

Distèche, A. pH measurements with a glass electrode withstanding 1500 kg per sq. cm hydrostatic pressure, 1222.

Di Stefano, F., and Vercillo, A. Detection of the addition of malt, in malt bread and "pasta,"

Dixon, B. E., and Hands, G. C. Field method for

the determination of phosgene, 1058.
- and Kiff, P. R. Self-sampling indicator tube for oxygen, 5486.

and **Metson**, **P.** Field method for determining total airborne lead, 4508.

Dizdar, Z. I., and Obrenović, I. D. Determination of free acid in uranium^{VI} solutions by means of cation exchangers, 3731.

Dmitrieva, V. L. See Kovalenko, P. N., 2072. Dmitrieva, V. N., and Bezuglÿi, V. D. Polarographic determination of butyl methacrylate in plasticised poly(butyl methacrylate), 1098.

See also Bezuglÿi, V. D., 5282.

Dobbs, H. E. Use of a standard Geiger - Müller tube, for the continuous monitoring of radioactive effluents from a chromatography column,

Dobkina, B. M., and Petrova, E. I. Determination of tantalum in niobium pentoxide by reaction with pyrogallol in the presence of tartaric acid, 2178.

See also Malyutina, T. M., 4778.

Dobrowolski, J. Complexometric determination of thorium, lanthanum and cerium^{III} with carminic acid, 57

Dobryszycka, W. M. See Mejbaum-Katzenellen-bogen, W., 1145.

Dobychin, S. L., and Aleskovskii, V. B. The "cementation" method for concentrating and determining micro amounts of certain metals,

Dodomka, J. Determination of monomeric vinyl

acetate, 1834.

Doell, B. H. See Bender, A. E., 1860.

Doerffel, K. See Geyer, R., 4575.

Doevelaar, F. S. See Hadorn, H., 2463. Dokhana, M. M. See El Raheem, A. A. A., 1110. Doležal, J., Drahoňovský, J., and Zýka, J. Reduction by metals and metal reductors in chemical analysis, 852. Metal reductors and amalgams in

chemical analysis. 1. Silver reductor, 3121.

- Höfer, M., and Zýka, J. Titrations with quinol and similar reducing agents. XV. Potentiometric micro-determination of gold in pharma-ceutical preparations, 2956; XVI. Potentiometric micro-determination of gold in urine, 2867.

and Janáček, K., Oscillographic polarography in quantitative analysis. X. Determination of europium in the presence of other rare-earth elements, 3179; XI. Detection and determination of arsenic, antimony and tin in mixtures, 4735.

- Moldan, B., and Zýka, J. Metal reductors and amalgams in chemical analysis. II. The redox behaviour of molybdenum, 3223.

See also Sulcek, Z., 1342, 3639.

Doman, N. G. See Shkol'nic, R. Ya., 4945.
Dominguez, A. M., Christensen, H. E., Goldbaum,
L. R., and Stembridge, V. A. Sensitive procedure
for determining carbon monoxide in blood or tissue utilising gas - solid chromatography, 5341.

Dominguez, M. See Camuñas, A., 2031. Dominguez, H. See Molnár, L., 4452. Donia, R. A. See Makens, R. F., 1056.

Doose, H. Determination of phosphorus in very small quantities of serum. Ultra-micro modification of the method of Fiske and Subbarow using amidol (2:4-diaminophenol hydrochloride), 3393.

Doretti, M. Determination of residual diazinon in olive oil, 5448.

See also Boniforti, L., 792. Dorfman, A. See Ludowieg, J., 4415.

Dorier, C., Dauphin, J., Redon, J.-C., and Berger, J.-A. Applications of paper partition chromatography to the separation and identification of alkaloids in toxicological analysis, 1157.

Doro, B., and Gabucci, G. Detection of mineral oil in roasted coffee, 5026.

and Sadini, V. Ultra-violet spectrophotometric studies of olive oil, 752.

Doroshina, N. I. See Brudz', V. G., 3169.

Dose, K. Carrier electrophoresis with higher

Dose, K. potentials, 2542.

Dostal, J. See Mandl, M., 1756.

Dowd, L. E. Spectrophotometric determination of quercetin, 1124.

Dowdy, J. D. See Kneip, T. J., 335.Downey, T. A. Determination of ascorbic acid in beer, 3997.

Dowson, W. M. Studies in qualitative inorganic analysis. XIII. Reduction of arsenic with ammonium iodide and subsequent precipitation of arsenic^{III} sulphide, 2165.
- See also Andrews, R., 98, and Bailey, D., 3602.

Dozinel, C. M. Standardisation in chemical analysis,

Drabent, Z., and Podeszewski, Z. Electrodialytic isolation of alkaloids from plant materials for quantitative analysis, 1156.

and Wawrzyczek, W. Determination of small amounts of cadmium in the presence of zinc by an indirect volumetric method, 5165.

Drahner, J. See Weidmann, G., 380.
Drahonovský, J. See Doležal, J., 852, 3121.
Drapkina, D. A. See Bruda', V. G., 3169.
Drawert, F., and Kupfer, G. Gas-chromatographic analysis of alcohols as esters of nitrous acid, 4326.

Dreisbach, L. See Schwarz, H. P., 5364.
Dreyer, W. J. See Katz, A. M., 3436.
Drèze, A. Determination of tryptophan in natural media. II. The stability of tryptophan during alkaline hydrolysis carried out in the presence of carbohydrates, 5371.

Drost, H. Determination of calcium in calcium silicon and ternary alloys of aluminium - calcium silicon, 4140.

Drotschmann, C., and Wyatt, R. Titration of hydrazine sulphate with permanganate, 5205.

Drouillas, M. See Ducret, L., 1329.

Drozdov, N. S., and Krylov, V. P. Photome

Photometric determination of barbituric and 2-thiobarbituric acids, 5289.

— See also Krŷlov, V. P., 1328.
Drozdov, V. A. See Vil'borg, S. S., 865.

Drożdz, B. Distinguishing xylose from arabinose and other sugars, 2272.

Dubbs, C. A., Vivonia, C., and Hilburn, J. M. Sub-fractionation of human serum enzymes,

Dubin, D. T. Assay and characterisation of amines by means of 1-fluoro-2: 4-dinitrobenzene, 4829. Duboff, G. S. All-glass self-cleansing steam-

distillation apparatus, 2519.

Dubois, J. E. Apparatus for, and method of, the titration of solutions, 1599.

Dubois, P., Jacqué, L., and Henniker, J. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956. Infra-red spectrometry in the characterisation of plastic materials, 2031.

Dubowski, K. M. See Friedemann, T. E., 206.
Dubovoina, T. P. See Ugnyachev, N. Ya., 365.
Dubský, J. Complexometric titrations (chelatometry). L.I. Direct determination of bivalent

tin, 3684.

Ducey, J., and McKinley, G. Analysis of sulphate in chromium plating baths, 105.
 Duchemin, J. F. See Burriel-Martí, F., 2031.

Ducret, L. Determinations in inorganic analysis by extraction with the aid of coloured cations. Introduction, 860; II. Use of complexes of 1:10-phenanthroline for the separation and determination of small quantities of nickel in the presence of iron and cobalt, 1025.

and **Drouillas**, M. Determinations in inorganic analysis by extraction with the aid of coloured cations. III. Determinations by extraction with the aid of basic dyestuffs. C. Determination of traces of phosphate with safranine, 1329.

Ducret, L., and Maurel, H. Determinations in inorganic analysis by extraction with the aid of coloured cations. III. Determination by extraction with the aid of basic dyestuffs.

A. Determination of traces of gold in the presence of platinum by methyl violet, 1276;

B. Determination of traces of tin with crystal violet, 1314.

and Ratouis, M. Determinations in inorganic analysis by extraction with the aid of coloured cations. III. Determinations by extraction with the aid of basic dyestuffs. D. Determination of traces of sulphate by methylene blue, 1336.

Dudek, V., and Stuchlik, J. Determination of cyclic ketones by paper chromatography, 3334.

Dufek, R., and Kopa, L. Determination of oxygen and aluminium oxide in aluminium bronze, 1690. Dufek, V., and Marek, Z. Determination of carbon in chromium carbide (Cr₂C₂), 2710.

See also Hampl, V., 5216.

Duffle, M. J., and Guravich, J. L. Bloor and Schoenheimer - Sperry methods in the estimation of cholesterol in serum, 2902.

Duffield, J. J., and Rogers, L. B. Theoretical plates in gas chromatography. Effects of distribution ratio, viscosity and amount of liquid phase,

Duffield, Separation and colorimetric W. D. determination of cobalt in presence of copper and nickel, 1022.

Duflo, J. See Champeix, L., 1261. Dugan, L., jun. See Tarladgis, B. G., 3988. Dugandžic, M., Flaschka, H., and Holasek, A. Complexometric determination of sodium in blood serum, 1842.

Duggan, D. E. Spectrofluorimetric determination of tocopherols, 3525.

Dukat, V. Method for the determination of water content in tobacco, 1232.

Dulmanis, A. See Roman, W., 1529. Dumazert, C., and Ghiglione, C. Chromatography by vapour entrainment, 1200.

Dumoulin, H. See Campen, W. A. C., 3647.

Dunbar, R. E., and Ferrin, F. J. Organic chemical microscopy.

VII. Amino acids and their dibenzofuran-2-sulphonates in qualitative organic analyses, 4942.

and King, W. M. Organic chemical microscopy. V. The photomicrography and crystallography of aromatic halide derivatives, 1078.

- and Moore, C. C. Organic chemical microscopy. p-Toluidides and amides as qualitative organic derivatives of carboxylic acids, 3315.

Duncan, J. L. See Anderson, D. M. W., 3295. Dunlap, W. J., and Wender, S. H. Purification of flavanone glycosides in the peel of the sweet orange, 5357.

Dunn, M. S., and Murphy, E. A. Chromatographic purity of amino acids: arginine, 4949.

Dunning, H. N. See Dwiggins, C. W., jun., 154, and Fisher, L. R., 1090.

Dupée, L. F. Determination of OO-dimethyl S-(N-methylcarbamoylmethyl) phosphorothiolo-thionate in technical Rogor and its formulations,

Dupire, F. Gas chromatography at high tempera-Application to coal tar and its derivatives, ture. 2834.

Du Plessis, L. A. See Plessis, L. A. du. Dupraw, W. A., and O'Neill, H. J. Direct determination of oxygen and nitrogen in titanium and its alloys. Use of bromine trifluoride, 77.

Dupre, E. F. See McCutchon, M. A., 1577.

Durand, M. See Paris, R., 4456.

Duranté, M. See Landucci, J. M., 2031. Durček, K. See Zbořil, V., 4399. Durham, W. F. See Elliott, J. W., 4915. Durie, R. A., and Szewczyk, J. Infra-red spectra

in the solid state: anomalous hydroxyl-group

absorption in potassium halide discs, 3077.

Duriez, V., and Barboni, J. Determination of aluminium and titanium in heat-resistant nickel chromium (80:20) refractory alloys, 155.

Durrett, L. R. Determination of solvent impurities in waxes and lubricating oil stocks by gas - liquid

chromatography, 2829.

Dušinský, G. The "dead-stop" method, 324.

— and Čavaňák, T. Polarographic determination of ephedrine, 1537.

and Tyllová, M. The aucubin content in some domestic Plantago species and in some galenicals (determination and identification), 4457.

Duswalt, A. A., and Brandt, W. W. Carbon -

hydrogen determination by gas chromatography. 4302

Dutina, D., and Judd, W. C. Second Conference-Analytical Chemistry in Nuclear Reactor Technology. Part 2. Instrumentation, remote-control techniques and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958] Application of anion-exchange separations and y-spectrometry to radiochemical determinations of activated corrosion products, 3103. Specific activity determination of cobalt-60 in neutron-activated corrosion products, 3103.

Dutka, F., Orient, O., and Gál, D. Measurement of carbon-14 with a gas counter, 2112.

Dutta, A. N., and Gupta, N. Estimation of phosphorus as quinoline molybdophosphate, 946. Dutta, R. L. Studies on the metal complexes of hydroxamic acids. Coloured complexes of iron, vanadium and molybdenum with isonicotinohydroxamic acid and their analytical uses, 867; IV. Coloured complexes of iron and vanadium with quinaldinohydroxamic acid and their

analytical uses, 1238.

Dutta, S. K. See Bardhan, D. K., 759. Dutton, H. J. See Mason, L. H., 814. Dutton, W. L., and Hirt, R. C. Time-lapse emission spectra using a rotating slotted disc and stationary emulsion, 3062.

Dutz, H. See Lehmann, H., 3278. Duval, C. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Mineral and organic applications of i.r. absorption spectra determined on one drop of aqueous solution, 2031.

Duval, M., and German, A. Streptococcal anti-hyaluronidase. I. Turbidimetric determination of hyaluronic acid, 3940.

 See also German, A., 3940.
 Duyckaerts, G., and Lejeune, R. Separations of radio-isotopes by means of ethylenediaminetetraacetic acid, 3620.

See also Fouarge, J., 4056.

Dvořák, J., and Řezáč, Z. Determination of alkali metals by flame photometry, 1260.

See also Rezáč, Z., 5161.

Dvorszky, M. See Hegedüs, A., 110. Dwiggins, C. W., jun., and Dunning, H. N. Quantitative determination of nickel in oils by X-ray spectrography, 154.

Lindley, J. R., and Eccleston, B. H. A cooled sample-holder for the X-ray spectrograph, 3066. Dybczyński, R. Separation of rare-earth metals by

means of anion exchange, 2652.

Dyck, R., and Veleker, T. J. Spectrographic analysis of molybdenum metal powder, 2202.

Dyer, W. J. See Bligh, E. G., 1852.

Dyfverman, A. Determination of thallium in biological material, 2869.

Dykes, F. W. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Gatlinburg, 1958.] Remote pipetter for highly radioactive samples, 3103.

Dýmov, A. M., and Koreneva, V. V. Extraction of ferric iron from chloride solutions with tribenzyl-

amine in chloroform, 522.

Dyrssen, D. Pure and Applied Chemistry. Lisbon, 1956.] Chelating agents for the extraction of lanthanide and actinide elements, 2031.

Dzhagatspanyan, R. V. See Bardenshtein, S. B.,

Dziomko, V. M. See Bozhevol'nov, E. A., 3153.
Dzubay, M. Determination of minute amounts of

barium by flame photometry, 4143.

Dzúrik, R., Kovács, P., and Niederland, T. R. Determination of unesterified fatty acids in blood and tissues, 658.

Earle, N. W., Pankaskie, J. E., and Sun, Y .- P. Micro-bioassay of insecticide residues in plant tissues without extraction, with special reference to aldrin and dieldrin, 1973.

Early, E. See Hees, W. van, 1823. Easterbrook, W. C. Determination of nitrate ions in mixed acids and nitric esters by electrometric procedures, 1707.

Easterday, C. L. Zirconium analysis by production

control Quantometer, 2675.

Eaton, E. H., jun. See Connerty, H. V., 1146. Ebel, S. See Kreuzkamp, N., 1546.

Eberius, E. Photometric determination of tin in zinc and lead, 71

and Bohnes, H. Preparation and stability of

the Karl Fischer reagent, 1237.

Eberle, A. R., and Lerner, M. W. Solvent-extraction concentration of certain rare-earth elements in vttrium, 1310. Determination of boron in beryllium, zirconium, thorium and uranium. Dissolution in bromine - methanol, 4154.

Ebihara, H. See Ikeda, N., 61. Eble, T. E., Hoeksema, H., Boyack, G. A., and Savage, G. M. Psicofuranine. I. Discovery, isolation and properties, 1896.

See also Sokolski, W. T., 1896.
 Ebrey, P. Effect of saponin on the separation of

amino acids by paper chromatography, 1134.

Eccleston, B. H. See Dwiggins, C. W., jun., 3066, and Whisman, M. L., 4802.

Echigoya, E. See Amberg, C. H., 173. Eckert, H. W. See McChesney, E. W., 3970. Eckert, T. Argentimetric titration of chloride ions

in organic association colloids, 1395.

Eckfeldt, E. L. Continuous coulometric analysis using a working electrode of predetermined

Eckhard, S. See Fehér, F., 466, Kock, W., 137, 3060, and Püschel, A., 4574.

Eddy, C. R. See Smith, A. M., 1876.

Eden, M., Karmen, A., and Stephenson, J. L. Use katharometers in gas chromatography,

Eder. K. Dumas method for the micro-determination of nitrogen, 167. Acoustic control of combustion in the Dumas determination of nitrogen, 4309. Design of Schöniger flask, 5068.

Edge, R. A., Brooks, R. R., Ahrens, L. H., and Amdurer, S. Reconnaissance observations on the combined use of ion-exchange enrichment and spectrochemical analysis for the determination of trace constituents in silicate rocks, 162.

Edgerton, J. H. Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Analytical requirements of the Lockheed critical experiment reactor, of the radiation effects reactor and of the radioactive

waste disposal system, 335.

Edmondson, P. R. See Dinsmore, H. L., 4083.

Edon, C. Polarographic determination of amino acids by complex formation with copper, 1858.

Edwards, J. W. See Milner, G. W. C., 891, 2075,

Edwards, K. L. See Martin, A. J., 320. Edwin, E. E., Diplock, A. T., Bunyan,

Green, J. Studies on vitamin E. I. The determination of tocopherols in animal tissues, 4506.

Eeckhaut, J. See Leliaert, G., 2031.

Efremov, G. V., and Stolyarov, K. N. Photometric determination of thallium in the ultra-violet region, 4691.

— See also Morachevskii, Yu. V., 1308. Efremov, N. A. See Korenman, I. M., 885. Efremov, V. Ya., Neiman, M. B., and Panfilov, V. N. Determination of alcohols by the isotopic dilution method, 3303.

Efron, M. L. Two-way separation of amino acids and other ninhydrin-reacting substances by highvoltage electrophoresis followed by paper chromatography, 2393.

Efros, S. M., Boichinova, E. S., and Chuprik, V. F. Vanadometric determination of barium ion, 899.

Boichinova, E. S., and Gorfunkel', Yu. M. Complexometric determination of copper and zinc ions when present together, 884.

Boichinova, E. S., and Kuznetsova, A. K. Determination of zinc and nickel in an electrolytic

bath of black nickel, 904.

Eger, C., and Lipke, J. Semi-micro method for the determination of fluoride and phosphorus in organic compounds containing both elements, 1051.

Egger, K. Chromatography of flavonol aglycones in a mixture of chloroform, acetic acid and water,

and Ensslin, W. Chromatographic chamber with simple thermal shield, 2529.

Eggers, D. F., jun., and Emerson, M. T. Automatic slit drive for infra-red spectrometers, 4082.

Eggers, E. M. See Zak, B., 2400.
Eggers, J. H. Umbellicomplexone and xanthocomplexone—complexometric fluorescent indicators, 4634.

— See also Aeschlimann, F., 3829.
Eglinton, G., Hamilton, R. J., Hodges, R., and
Raphael, R. A. Gas-liquid chromatography of natural products and their derivatives, 1393.

Egner, H. Conductimetric titration of isohumulone in beer according to Verzele, 4486.

See also Krauss, G., 4484.

Egorov, N. P., and Kovalev, I. A. Spectrographic determination of alkali metals, 2061.

Egorov, V. N. See Vernýi, E. A., 4254.
Egorov, Yu. P., Shlyapochnikov, V. A., and Petrov,
A. D. Determination of the structure of alkanes and naphthenes by infra-red spectroscopy, 2755.

Ehmann, W. D., and Huizenga, J. R. Determination of bismuth, thallium and mercury in stone meteorites by activation analysis, 1040.

Ehrenberg, L. See Trzebiński, J., 1829. Ehrlich, J. See Kohberger, D. L., 3958. Eichberg, E. P. See Plana Eichberg, E.

Eichhorn, F. See Rappaport, F., 4974. Eigelaar, G., and Mossel, D. A. A. Microbiological detection of preservatives other than benzoic or sorbic acid in margarine with a sodium chloride-

tolerant yeast as test strain, 273.

Eik-Nes, K. B. See Oertel, G. W., 234, 238.

Eilers, N. J. See Sokolski, W. T., 1896.

Einsporn, E. Polarisation of standard sugar solutions at temperatures about 20° C. 3491.

Eisenbrand, J., and Klauck, A. Reduction test for the examination of bottled milk, 1915.

Eisenstadter, J. See Bobtelsky, M., 159.

Eiss. M. I., and Giesecke, P. Colorimetric determination of organic peroxides, 1782.

El Asmar, M. F. See Wahba, N., 2705.

El-Attar, T. Physico-chemical method for deter-

mination of human urinary oestrogens, 690.

Elbel, A. W. "Tastpolarographie", 4608.
Elbert, W. See Sawicki, E., 2313.
Elbling, P., and Goward, G. W. Determination of oxygen as an impurity in zirconium and Zircaloy, 2145.

Goward, G. W., and McGeary, R. K. Determination of hydrogen as an impurity in zirconium and Zircaloy, 937.

Eldefrawi, M. E. See Menn, J. J., 4539. Eldridge, A. See Keily, J. H., 1245, 1725. El Hadidy, A. See Issa, I. M., 906. Eliáš, F. Analysis of Talbot-steel slags, 3279.

Elinson, S. V., and Pobedina, L. I. Photometric determination of silicon in zirconium, 2142.

Elleman, T. S. See Brown, C. T., 4674.

Ellert, H., Jasiński, T., and Marcinkowska, K.

Photometric titrations in non-aqueous media. I. Determination of weak bases, with methyl violet as indicator, 5399.

Jasiński, T., and Pawelczak, I. Titration of some amines in propionic acid and propionic anhydride using colour indicators, 255.

Elliot, J. S. See Sharp, R. F., 1480.
Elliott, J. W., Walker, K. C., Penick, A. E., and
Durham, W. F. Urinary p-nitrophenol determination as a measure of exposure to parathion, 4915

Elliott, L. E. See Hornstein, I., 3521, 5032.

Elliott, M. C. See Maeck, W. J., 977.
Elliott, W. H. Estimation of aminoacetone and δ-aminolaevulic acid, 3912.

Ellis, G. H., and Hetzel, C. A. Determination of meprobamate in urine. Applicability to other compounds containing an NH group, 645. Ellis, J. F., Forrest, C. W., and Allen, P. L. Quanti-

tative analysis of mixtures of corrosive halogen gases by gas - liquid chromatography, 3735.

Ellis, R., and Gaddis, A. M. Paper chromatography of 2:4-dinitrophenylhydrazones. Estimation of alkan-2-one, n-alkanal, alk-2-enal and alka-2:4dienal derivatives, 3310.

Ellis, S. R. M., Garbett, R. D., and Sadler, H. N. Determination of the water content of aqueous mixtures, 1661

Ellis, W. G., and Brown, E. A. [Second Conference —Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Direct flame-photometric method for the determination of micro quantities of alkali metals in concentrated solutions of uranyl nitrate, 335.

Ells, H. A. Colorimetric method for the assay of soluble succinic dehydrogenase and pyridine nucleotide-linked dehydrogenases, 3935.

Ellsworth, L. D. See Walker, J. M., 4614. Ellwood, R. J. See Roth, J. F., 2541. Elo, A., jun., and Polky, J. R. Determination of aluminium in cracking catalysts by a modified Wänninen and Ringbom method, 4157.

El Raheem, A. A. A. Omega Chrome Fast Blue 2G: a new metal indicator for EDTA titrations, 4.

Amin, A.-A. M., and Moustafa, A. S. Omega Chrome fast blue 2G in the micro-determination

of some metals, 4113.

Amin, A.-A. M., and Osman, F. A. Omega Chrome black blue G as a colorimetric reagent for the micro-determination of various cations, 3120.

and Dokhana, M. M. Metomega Chrome blue BBL as a metal indicator and its application for the determination of calcium and magnesium in serum. 1110.

and Moustafa, A. S. Omega Chrome blue green BL as analytical reagent for calcium and magnesium, 2594.

and Osman, F. A. Omega Chrome black blue

G in chelatometric titrations, 2043. See also Amin, A.-A. M., 149.

El-Sadr, M. M. See Wahba, N., 2705. El-Shamy, H. K., and Barakat, M. F. Potentiometric reduction of solutions containing molybdenum and tungsten ions, 2203.

Elskamp, H. J. See Spaander, P., 1218. Elvers, H. See Berger, W., 3114, 3270.

Elvidge, D. A., and Proctor, K. A. Gas chromato-graphy for determining water in pharmaceutical preparations, 1155.

Elwood, J. C. See Marcó, A., 2585. Emel'yanov, V. A., and Nesterov, V. E. Capture of y-radiation from cadmium as a means of slowneutron detection in the determination of soil moisture, 1960.

Emerson, M. T. See Eggers, D. F., jun., 4082. Emery, J. F., and Leddicotte, G. W. Aluminium determination in reactor cooling water, 4158.

Emi, K., Hayami, T., and Takeda, H. Analytical studies on fluoride. IV. Determination of a small amount of fluorine in rocks, 2219; V. Determination of fluorine in animal organs, 2219.

Emmerich, A. See Schneider, F., 3496. Emmerson, J. L., and Miya, T. S. Chromatographic

detection of meprobamate, 3483.

Enari, T .- M., Nummi, M., and Mikola, J. Method for the determination of the protein content of barley, 4482.

Ende, H. vom, and Bardenheuer, F. Method for determination of the basicity of Siemens - Martin slags, 1768.

Endo, K. See Oda, N., 435.
Endo, Y., and Takagi, H. Successive determination of iron and aluminium in chromium refractory and ore with 8-hydroxyquinoline, EDTA and CyDTA [1:2-diaminocyclohexane-NNN'N'-tetraacetic acid], 3743.

Endrői-Havas, A. See Schulek, E., 5207. Engel, D. See Krajčinović, M., 2825. Engel, L. L. See Goldzieher, J. W., 5104.

Engelbrecht, A. See Nachbaur, E., 2159.
Engle, R. E. See Pert, J. H., 4071.
English, E. Determination of benzoic acid in soft

drinks, 1178.

Enkvist, T., and Halmekoski, J. Adsorption affinities of dihydroxybenzenes and pyrogallol on strong anion exchangers in hydrogen sulphite form, 2307.

Enohara, R. See Fukamauchi, H., 1696, 1714. Enselme, J., Tigaud, J., and Frey, J. Distribution of proteins in electrophoresis on a column of cellulose acetate by the method of Tiselius, Flodin and Porath. 3441.

Ensslin, W. See Egger, K., 2529.

Epstein, S. Electrical spectrographic calculator, 4581. Variamine blue: a versatile redox in-

Erdey, L. dicator, 1243.

Bányai, É., and B.-Gere, É. Variamine blue derivatives applicable as redox indicators, 1649. Variamine blue sulphate as redox indicator,

Buzás, I., and Pólos, L. Siloxene as chemiluminescent indicator in permanganate titrations, 2040. Use of siloxene as chemiluminescent indicator in cerimetric and chromatometric

titrations, 2041.

and Inczedy, J. Titrations with hydrogen peroxide and sodium hypobromite solutions, 14. Inczedy, J., and Markovits, I. Oxidation reduction reactions on ion-exchange columns. Reduction of iron^{III} ions on ion-exchange stannous columns, 4783.

Pólos, L., and Gregorowicz, Z. Argentimetric titrations, with redox indication. III. Determination of nitrate ions and nitro compounds,

- and Svehla, G. Analytical applications of the ascorbimetric determination of ferricvanide. II. Ascorbimetric determination of free halogens, hypohalites, halites and halates, 122.

Vigh, K., and Pólos, L. Argentimetric titrations, with redox indication. II. Determination of ammonia, ammonium ions and nitrogenous organic substances, 2686.

 See also Bányai, É., 5166, Mázor, L., 3791, 4805, and Paulik, F., 2444.
 Eremenko, K. F., and Berlin, A. M. Microchemical and spectrographic analysis of the residual materials in developed photographic layers, 1102.

Eriksson, A. F. V., and Lindvall, S. Cellulase pre-paration from *Penicillium*. I. Method of determing enzymatic activity, 3932.

Eristavi, D. I., Brouchek, F. I., and Tsivtsivadze, T. A. Determination of cobalt by radiometric titration with potassium ferrocyanide, 2738.

Erko, V. F., and Bugaeva, N. I. Spectrographic determination of iron, aluminium, calcium, magnesium, copper and nickel in high-purity metallic manganese, 1347. Erley, D. S., Blake, B. H., and Long, A. W. Tech-

nique for polishing barium fluoride windows, 4586.

See also Sterling, G. B., 2352, and Stewart, R. D., 1482, 3858.

Ermakov, V. I. Apparatus for determining electroconductivity and composition of solutions, 4591.

Ernoult, J. See Baudin, G., 3180. Ershov, B. P., and Mosina, A. S. Determination of hydroxymethyl groups in phenolic resins,

Eschle, K. Sp nicotine, 704. Spectrophotometric determination of

Eschmann, H. Determination of volatile acids in wine, 4004.

chnauer, H. Analytical chemistry of wine. VI. Detection and determination of titanium and Eschnauer, H. iron in wine with tiron, 1931; VII. Determination of vanadium in wine with 8-hydroxyquinoline, 2469; VIII. Determination of cobalt in wines with 2-nitroso-1-naphthol, 2470.

Eshwar, M. C. See Deshmukh, G. S., 3122.

Eskevich, V. F., and Komarova, L. A. Determination of uranium by amperometric titration, 4247. Espersen, G. See Laursen, T., 696.

Esposito, G. G., and Swann, M. H. Volumetric determination of isophthalic and other dicarboxylic acids in modified alkyd resins, 3852.

See also Swann, M. H., 1465.

Esso Research & Engng Co. Apparatus and method for converting X-ray diffraction patterns, 3056.

Estep. P. A. See Karr. C., jun., 4867.

Ésterlis, K. A. See Nazarenko, V. A., 4172. Estes, F. L. See Cooper, J. A., 4057. Etienne, A. See Pro, M. J., 2989.

Étlis, V. S. See Perepletchikova, E. M., 4328. Ettre, L. S., and Brenner, N. Molecular sieves as substractors in gas-chromatographic analysis. III. Secondary effect of the molecular-sieve trap column, 5092.

See also Brenner, N., 3053, 5092.

Euler, U. S. von. [Symposium on catecholamines.] Development and application of the trihydroxyindole method for catecholamines, 4938.

Evans, H. B., Hrobar, A. M., and Patterson, J. H. Determination of zirconium in uranium fission allovs, 4720.

Evans, J. K. See Conrad, A. L., 3363, 3772. Evans, W. A., Johnston, F. B., and Ward, G. M. Micro-Kjeldahl digestion apparatus, 800.

Eve, D. J. See Strasheim, A., 3011. Eve, J. R. See Johnston, G. W., 1476. Evenigorodskaya, V. M., and Ryanicheva, M. I. Determination of uranium by the fluoride method with a titrimetric finish, 2206.

Evens, F. M. See Monte Evens, F. Everest, D. A., and Martin, J. V. Determination of thorium in ores by liquid - liquid extraction, 79. Evlashin, L. S., and Zatuchnaya, L. A. Determina-

tion of boron in iron alloys, 1005 Evseeva, T. I. See Vinogradov, A. V., 969. Evzlina, B. B. Photometric determination of

aluminium in phosphate furnace slags, 410.

Fabre, R., Truhaut, R., and Boudene, C. Microdetermination of mercury in urine, 205.

Fabrikant, I. See Wynn, J., 3435.

Fabris, A., and Vitagliano, M. Identification of additions of rectified oils to expressed olive oils, 2478

Fabrizio, F. A., King, R. W., Cerato, C. C., and Loveland, J. W. Determination of trace hydrocarbon impurities in petroleum benzene and toluene by gas chromatography, 3362.

Fachausschuss Mineralöl- und Brennstoffnormung. Testing mineral-oil hydrocarbons and similar products. Determination of the chlorine content, 1818. Testing liquid fuels. Rapid determination of tetraethyl-lead in petrol by decomposition with hydrochloric acid and complexometry, 3837

Fagel, J. E., Witbeck, R. F., and Smith, H. A. Determination of oxygen, hydrogen and nitrogen

in refractory metals, 15.

Fairbairn, J. W., and Suwal, P. N., jun. Determination of the alkaloids of Conium maculatum by paper chromatography, 3949.

Fairman, W. D. See Moore, F. L., 1003.

Faith, L. Polarographic determination of papaverine, 5402.

Fales, F. W. Periodate-oxidation method for the determination of glycogen end-groups, 2879.

Faley, R. L., and Long, J. F. High-temperature

seal for gas-chromatography detectors, 4567.
Falloon, S. W. H. W. See Marconi's Wireless Telegraph Co., Ltd., 2003.
Fan, C. See Busev, A. I., 2199.
Fan, L.-T. See Chang, Y.-C., 293.
Fanica, L. See Buzon, J., 1955.
Fanica, L. See Buzon, J., 1955.

Fankuchen, I. See Felten, E. J., 3068, and William-

son, R. S., 3570.

Farah, M. Y. See Flaschka, H., 2031.

Farina, E. See Marras, G., 3967.

Faris, J. P. Adsorption of the elements from hydrofluoric acid by anion exchange, 4648.

Farkaš, J. Determination of hydroxyl groups in alkali lignin by methylation with dimethyl sulphate, 2375.

Farley, L. L., Detert, F. L., Nicksic, S. W., and Webb, W. P. Burner for combustion of large solid samples, 4089.

Farlow, N., Wiel, S., and Polissar, J. Pipetting device for volumes of 10⁻⁴ to 10⁻⁹ millilitres,

Farmer, V. C. Interaction between sugars and alkali halides in pressed discs, 3076.

Farmilo, C. G. See Genest, K., 701.
Farrar, L. G. See Feldman, C., 3103.
Farrell, F. See Mitchell, G. P., 826.
Farrell, R. F., and Harter, G. J. Spectrographic

determination of sodium, lithium, barium and strontium in zirconium and Zircalov using the silver chloride carrier technique, 2139.

Harter, G. J., and Jacobs, R. M. Determination of trace impurities in zirconium metal by a pointto-plane spectrochemical procedure, 1702.

Jacobs, R. M., and Gordon, N. E. Spectrochemical determination of impurities in zirconium and Zircaloy using the silver chloride carrier technique, 2137.
- See also Jacobs, R. M., 2140.

Farrington, P. S., Pecsok, R. L., Meeker, R. L., and Olson, T. J. Detection of trace constituents by gas chromatography. Analysis of polluted atmosphere, 1951.

Fassel, V. A., and Altpeter, L. L. Emission spectrometric determination of the gaseous elements in metals. VI. Oxygen in vanadium, 5214.

Gordon, W. A., Jasinski, R. J., and Monte Evens, F. Emission-spectrometric determination of the gaseous elements in metals, 3123.

Fassina, F. See Cima, L., 1845.
Fassinger, W. P., and Gonter, C. E. Ultra-violet spectrophotometric determination of phthalic Application to analysis of naphthalene oxidation products, 1434.

Fati, S. See Vecchione, C., 2361.

Faulhaber, M., and Rosenberger, A. Quantitative determination of synthetic fibres in papers by chemical methods, 622.

Pure and Applied Chemistry. Lisbon, 1956.] Colorimetric method of titration for the accurate determination of substances absorbing in the u.v. region, 2031.

Faust, J. P. See Robins, D. M., 5109. Fauth, M. I., and McNerney, C. F. Thermal stability and titrimetric determination of decaborane [decaboron tetradecahydride], 3156.

Favorskaya, I. A., and Auvinen, E. M. Determina-

tion of alkoxyl groups, 1054. Favre, J. See Baron, G., 318.

Faye, G. H., and Inman, W. R. Radiochemical evaluation of fire-assay method for determination of silver, 29.

Featheringham, J. A., Lentz, C. F., and Jacobs, R. M. Spectrographic determination of impurities in niobium, 2173. Spectrographic determination of boron and cadmium in niobium, 2174. Spectrographic determination of tantalum, titanium and zirconium in niobium, 2179. Spectrographic determination of tungsten in niobium, 2204.

Febvre, P., and Roret, G. Application of the modified Vitali - Morin reaction to the assay of some preparations from the Fr. Codex with

solanaceous base, 4447

Fedorenko, N. V. See Pshenitsyn, N. K., 2739. Fedorova, G. A., and Devyatnin, V. A. Determination of hydroxyflavones in vegetable matter and industrial preparations, 4416.

Fedorova, M. N., and Klimenko, Yu. V. Determination of quartz in sulphide ores of non-ferrous

metals, 66.

Fedoseev, P. N. See Terent'ev, A. P., 3284. Fedotov, N. A. See Leont'ev, V. M., 5515. Feeny, F. See Pro, M. J., 2989.

Feher, F., Eckhard, S., and Sauer, K. H. Analytical characteristics of commercial and purified sulphur,

Fehér, M. See Schulek, E., 168, 451.
Fehle, R. See Wollweber, G., 4274.
Feichtinger, H., Bächtold, H., and Schuhknecht, W. Apparatus for the analysis of gases in metals,

Feigl, F. [International Symposium on Microchemistry. Birmingham, 1958.] Pyrolytic and pyrohydrolytic cleavages in spot-test analysis, 3102

- and Anger, V. Detection and differentiation of phenyl hydrogen sulphate and phenolsulphonic acid by spot analysis, 4851. Spot-test detection of esters of non-carboxylic acids, 4835.

- Anger, V., and Gentil, V. Identification of sulphadiazine in spot analysis, 3875.
- Anger, V., and Goldstein, D. Detection of primary alkyl halides by a spot reaction, 4319.

and Goldstein, D. Selective spot test for isatin, 5310.

and Jungreis, E. Spot tests for phenol vapours and for aromatic compounds containing oxygen, 3331. Spot tests for phenol esters and phenol ethers, 3332.

Feldberg, S. W., and Bricker, C. E. Ion-exchange

membranes in coulometry, 3094.

Feldheim, W. Chemical determination of vitamin C (ascorbic acid and dehydroascorbic acid) in food (combined method), 5466. Chemical determination of vitamin E in foods. (Emmerie and Engel reaction), 5469.

Feldman, C., Musick, W. R., Horton, A. D., Farrar, L. G., Hobbs, B. B., Shults, W. D., Kelley, M. T., Stelzner, R. W., Fisher, D. J., Koskela, U., Attrill, J. E., and Mottern, J. L. [Second Con-ference—Analytical Chemistry in Nuclear Reactor Technology. Part 2. Instrumentation, remotecontrol techniques and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Remotely controlled analytical facilities for the analysis of samples from the homogeneous reactor. Parts A to E,

Feldman, L. S. See Beckman, H. F., 788. Feldmann, E. G., and Koehler, H. M. Colorimetric determination of lidocaine [lignocaine] with cis-

aconitic anhydride, 2940.
- See also Koehler, H. M., 3966.

Felloni, L. See Cavallaro, L., 5426. Fellows, C. G. See Union Carbide & Carbon Corp., 4596

Felsenfeld, G. Determination of cuprous ion in copper proteins, 5384.

Felten, E. J., Fankuchen, I., and Steigman, J. Solution to the matrix problem in X-ray fluorescence spectroscopy, 3068.

Fennell, T. R. F. W., and Webb, J. R. Semi-micro determination of silicon and phosphorus in organic compounds, 2257.

Fenton, A. J., jun., and Crisler, R. O. Determination of cis-unsaturation in oils by near-infra-red spectroscopy, 3514.

Ferdet, J. See Willemart, R., 1878.
Fergason, L. A. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Flame-photometric determination of sodium and calcium in uranium ore concentrates, 335.

 Ferguson, J. See Irving, H., 2031.
 Ferguson, J. J., jun., and Rudney, H. Biosynthesis of β-hydroxy-β-methylglutaryl coenzyme A in yeast. I. Identification and purification and assay of the hydroxymethylglutaryl coenzyme-condensing enzyme, 695.

Ferguson, W. C. See Howard, H. E., 614. Fernandex, C. See Jacobson, H. I., 3859. Fernandez, J. E., McPherson, R. T., Finch, G. K., and Bockman, C. D. Quantitative analysis of acetic acid - acetic anhydride mixtures in the near-infra-red region, 4333.

Fernandez, V. See Astudillo, M. D., 2031. Fernandez Cellini, R. See Roca Adell, M., 439. Fernandez Paris, J. M. See Calleja, J., 1042.

Fernando, Q. See Pasztor, L., 4277.
Fernand, P. See Buzon, J., 1995.
Ferrari, A., Russo-Alesi, F. M., and Kelly, J. M. Automated system for the chemical determination of streptomycin and penicillin in fermentation media, 2431.

Ferreira Alves, V. See Buccheri, A., 4681.

Ferreri, C. See Rancati, G., 2915. Ferrin, F. J. See Dunbar, R. E., 4942

Ferry-Wilczeck, A. See Truchement, J. L., 5271. Fertig. J. Determination of chlorine in high polymers, 4384.

Fer'yanchich, F. A. Quantitative micro-analysis of gold, 4671.

Fetterman, P. L. See Sorof, S., 4957.
Feuersenger, M. Determination of cyanide residues in apples, 3505.

Fiala, A., Macek, J., and Stadler, V. Apparatus for electrolytic isolation of carbides and non-metallic inclusions from steel, 4594.

and **Štádler**, V. sulphur in steel, 538. Determination of combined

Fichera, A., and Zappalà, M. Detection of tea-seed oil in olive oil. Reliability of the Fitelson test.

Fielder, R. S., Jackson, P. J., and Raask, E. Determination of sulphur trioxide and sulphur dioxide in flue gases, 4371.

Fijolka, P., Kayler, R., and Lenz, I. Paper-chromatographic analysis of dicarboxylic acids in polyesters, 1459.

and Lenz, I. Determination of fumaric acid in polyesters, 200.

Fikentscher, H. See Gerlach, E., 666.

Fildes, J. E. Empty-tube combustion methods for the elementary micro-analysis of organic compounds, 1770.

Filippova, K. I., and Ivanova, L. P. Reaction for bivalent copper ions, 2624.

Filippova, N. A., and Korosteleva, V. A. Use of EDTA in chemical phase analysis of copper and its compounds, 881.

Martynova, L. A., Savina, E. V., and Kulichi-khina, R. D. Phase analysis of lead-production

dust for selenium content, 5224.

Filippova, N. V. See Zaborenko, K. B., 5204. Fina, L. R., and Sincher, H. J. Micro steam-distillation apparatus, 2518.

Finch, G. K. See Fernandez, J. E., 4333.

Fine, L., and Wynne, E. A. Lanthanum chloranilate.

A direct colorimetric reagent for general fluoride determinations, 3240.

Finkel'shtein, A. I., Malachevskaya, F. L., Fisher, A. M., and Rabovskii, B. G. Method of producing potassium bromide plates for the infra-red spectroscopy of solids, 1624. See also Roginskaya, Ts. N., 563.

Finkel'shtein, M. Z., Timokhin, I. M., and Mukhamedov, Kh. U. Quantitative determination of the sodium salt of carboxymethylcellulose, 1095.

Finn, R. K. Theory of agar diffusion methods for

Finnegan, J. J.

See Mellichamp, J. W., 3061.

Finston, H. L.

See Heyn, A. H. A., 4138.

Finzi, A. M. C.

See Costa Finzi, A. M.

Fioletova, A. F. Determination of aluminium in metallic magnesium by a luminescence method, 3145

Fiorenza, A., and Lachin, M. Use of effective line widths, 2549.

Firsching, F. H. Precipitation of barium chromate from homogeneous solution using complexation and replacement. Separation of barium from relatively large amounts of strontium and lead, 2082.

Fišar, C. See Matrka, M., 4881. Fischer, J., Fischerová-Bergerová, V., and Vašáková, E. Histochemical test for cerium in tissues, 4401.

Fischer, R. B., Yates, M. L., and Batts, M. M. Turbidimetric titrations, 1196.

See also Vratny, F., 2565.

Fischer, W., and Uhlich, U. Identification of pesticides in mixtures by means of infra-red spectrography, 4033.

— See also Gerner, G., 1846. Fischer, W. R. See Jordan, K., 1069. Fischerová-Bergerová, V. Determination of iron and copper in biological fluids after therapy with EDTA, 1478.

See also Fischer, J., 4401. Fischl, J. Micro-estimation of iron in haemoglobin, 1516. Serum iron determination using direct colour extraction, 4907. Quantitative colorimetric determination of tryptophan, 5370.

— See also Rappaport, F., 3926.

Fisher, A. J. See Cassidy, W., 5449.

Fisher, A. N. See Finkel'shtein, A. I., 1624.

Fisher, D. J. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology.

Part 2. Instrumentation, remote-control techniques and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Instrumentation for chemical analyses. B. Applications of operational amplifiers to controlled-potential and derivative polarography, 3103.

See also Feldman, C., 3103, Kelley, M. T., 2016, 4611, and Surak, J. G., 3737.

Fisher, G. S. See Kenney, R. L., 2314. Fisher, H. A. See Lloyd, H., & Co., Ltd., 4404. Fisher, L. R., and Dunning, H. N. Chromatographic resolution of petroleum porphyrin aggregates,

Fisher, M. W. See Kohberger, D. L., 3958.

Fishman-Goldenberg, V., and Spoerri, P. E. Colorimetric determination of dicarboxylic acid derivatives as hydroxamic acids, 2283.

Fiti, M. See Bădănoiu, M., 4700.

Fitzgerald, J. S. Gas chromatography applied to the

analysis of phenols, 1806.

Fitzpatrick, M. See Blakemore, L. C., 1571.

Flaschenträger, B., and Wahhab, S. M. A. Isolation and estimation of furan-2; 5-dicarboxylic acid in

human urine, 4406.

Flaschka, H., Sadek, F., and Farah, M. Y. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956. Selective detection and photometric determination of zirconium,

See also Dugandžić, M., 1842.
 Flaschka, H. A., and Wolfram, W. E. Assay of reagent-grade "metaphosphoric acid," 2164.
 Flatt, R., and Cusani, P. Determination of chromium in products of the cement industry,

Flavin, M., and Slaughter, C. Determination of

Fleischer, K. D. See Tuckerman, M. M., 3294. Fleischer, K. D. See Tuckerman, M. M., 3294. Fleisher, G. D. See Ivanova, E. A., 530. Flek, J. See Sedivec, V., 615, 3213, 5294. Flerov, G. N. See Leipunskaya, D. I., 1385. Fletcher, A. N., Pierson, R. H., and Gantz, E. St. C.

Gravimetric determination of cellulose acetate in double-base propellents, 1103.

Fletcher, J. C. See Harvey, J. L., 3372.
Fletcher, J. C. See Corfield, M. C., 2521.
Fletcher, J. P. See Johnson, J. B., 1784.
Fleury, P., and Le Dizet, L. Characterisation of

glyoxylic acid in media arising from the action of periodic acid on organic compounds, 2285.

Flines, J. de. See Sijde, D. van der, 1603. Flis, I. E. See Mishchenko, K. P., 5220. Flodin, P. See Porath, J., 803. Florence, T. M. Determination of sub-microgram

and microgram amounts of beryllium in filterpaper, 387. Determination of uranium in ores by

cathode-ray polarography, 3228.
Floret, A. See Martin, F., 559.
Flowe, L., Thompson, H. D., and Cali, J. P. Neutron activation analysis of silicon carbide, 3181.

Flum, Z. Colorimetric determination of phosphorus in the ash of solid fuels, 85.

Flyantikova, G. V. See Nazarenko, V. A., 4172.

Foell, T. See Smith, L. L., 2908. Foglino, M. L. Photometric determination of aluminium in steel, after separation with ionexchange resins, 2232.

- and Spagliardi, G. P. Spectrophotometric determination of combined carbon in cast iron, 2234

Folk, J. E., and Gladner, J. A. Cobalt activation of carboxypeptidase A. Assay for the enzyme,

Fomina, O. A., and Smirnov, N. A. Spectrographic determination of impurities in tin for tinning baths, 1316.

Fonseca, M. H. R. See Gouveia, A. J. A. de,

Fontana, P., and Rossi, G. Complexometric determination of extractable iron in soils, 784.

Forbes, J. W., and Telfer, A. Apparatus for following reactions in an infra-red spectrophotometer, 3078.

See also Dannenberg, H., 4892, and Dearden, J. C.,

Ford, J. E. Microscopical detection of damage in viscose rayon, 2847.

Foreman, J. K., Riley, C. J., and Smith, T. D. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Absorptiometric determination of microgram quantities of uranium using the "thoronol" complex of uranium^{1V}, 2031.

Forist, A. A. Spectrophotometric determination of

Elimination of monosaccharide psicofuranine. interference in the determination of a nucleoside, 2937

and Theal, S. Spectrophotometric determination of cycloheximide, 724.

Theal, S., and Hoeksema, H. Psicofuranine. VII. Chemical determination in plasma and serum, 3406.

orjaz, A., Brito, L., and Manso, L. [Fifteenth International Congress of Pure and Applied Forjaz, A., Brito, L., and Manso, L. Chemistry. Lisbon, 1956. Determination of vitamin K₂ in Portuguese sardines, 2031.

Formanek, K., and Höller, H. Flavylium perchlorate

as a reagent in paper chromatography, 3112.

Forney, R. B. See Harger, R. N., 207.

Fornwalt, D. E., and Healy, M. K. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Spectrographic determination of trace impurities in niobium, 335.

and Komisarek, J. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] A fluorescence X-ray spectrographic method of analysing titanium niobium alloys, 335.

Forostyan, Yu. N., and Lazur'evskii, G. V. Qualitative detection of phosgene in air, 5040.

Forrest, C. W. See Ellis, J. F., 3735.
Forrest, F. M. See Forrest, I. S., 3874.
Forrest, I. S., and Forrest, F. M. Urine colour test for the detection of phenothiazine compounds. 3874.

Forrey, C. R., jun. See Miner, F. J., 4689. Forshee, B. W. See Harvey, J. L., 3372. Forsyth, J. B. See Black, P. J., 2543. Forsythe, J. H. W., Magee, R. J., and Wilson, C. L.

Analytical chemistry of the pyridine thiocyanates.

II. Separation of ruthenium and palladium, 4289; III. Separation of rhodium, palladium and platinum, 4289.

Forth, H. See Schneider, F., 3499. Forziati, A. F. See Strassburger, J., 4886.

Foss, O. P. Direct titration of calcium in urine with EDTA, 4396. Iodine-131 as an "amplifier" in paper electrophoresis of protein solutions of low concentrations, 4434.

Fossan, D. D. van, Baird, E. E., and Tekell, G. S. Flame-spectrophotometric method for estimation of magnesium in serum, 1107.

Foster, E. See Phillips, G., 121.
Foster, W. H., jun., and Hume, D. N. Factors affecting emission intensities in flame photometry, 3573. Mutual cation interference effects in flame photometry, 3574.

Fostier, P. Determination of gum acacia in con-

fectionery products, 3985.

Fotherby, K. Estimation of dehydroepiandrosterone in urine, 2911.

Foti, S. C. See Callahan, C. M., 2200. Fouarge, J., and Duyckaerts, G. Chromatography of inorganic ions on cellulose, 4056.

Fouassin, A. Analysis of spirits by vapour-phase chromatography, 3512.

Fourie, R. M. See Strasheim, A., 3011.

Fournier, R. M. Titrimetric method for the measurement of the cholinesterase activity of blood serum and its application to the determination of several compounds possessing anticholinesterase activity, 5392.

Fowler, R. M. Recent developments in metal analysis, 3118.

Fowlkes, O. F. See Cooper, S. R., 3821. Fox, F. T. See Barber, E. D., 3527.

Foxboro Co. Chromatographic gas analysis sample control system, 4558.

Frade, I. S. del. See Paladini, A. C., 213. Fraenkel-Conrat, J. Standardisation curves for

y-globulin determinations, 1143. Frahn, J. L., and Mills, J. A. Paper ionophoresis of carbohydrates. I. F four electrolytes, 1411. Procedures and results for

Frain, J. F., and Ryan, J. R. Determination of the secondary impurities in hafnium by emission-

spectrographic analysis, 2150.

Ryan, J. R., and Jacobs, R. M. Spectrographic determination of impurities in zirconium and Zircaloy using a chromium internal standard, 2136. Determination of the primary impurities in hafnium by emission-spectrographic analysis, 2149.

Franc, J. Chromatography of organic compounds.

II. Paper-chromatographic separation of ketones and aldehydes as rhodanine derivatives, 1789. Chromatography of aromatic isomers. XII. Paperchromatographic separation of chloronitronaphthalenes, 3347; XIII. Determination of toluenesulphonamides and p-sulphamoylbenzoic acid in saccharin, 3973.

and Hájková, M. Chromatography of organic compounds. IV. Determination of ethanolamines

with paper chromatography, 3811.

and Jokl, J. Relation between side-chain length and R_M value, 1394.

and Knížek, J. Chromatography of aromatic isomers. XI. Paper-chromatographic separation of hydrocarbons after nitration, 1804.

and Wurst, M. Electromigration methods. II. Relation between the structure of anthraquinone derivatives and their mobility in paper electrophoresis, 4857. 77. Chromatography of organic V. Determination of phenylcompounds. chlorosilanes by gas chromatography, 4890.

Franchi, G., and Pellerano, C. Determination of chloramphenicol, 5001.

Francis, H. J., jun. [Progress in microchemistry.] Equipment and tools, 2033.

Franconi, U. See Brogioni, M., 2449.

Franck, F., and Mastner, J. Quantitative evaluation of paper chromatograms and electropherograms without elution. I. Contribution to the technique, 2526.

See also Mastner, J., 3042.

Frank, O. See Baker, H., 1125, 3884.

Franke, G. Mass-spectrometric hydrocarbon-type analysis of petrol, 5312.

— See also Kleber, W., 747, 4485, 4487. Franzen, E. See Wagner, J., 2391.

Franzke, C. Ultra-violet spectral studies on the quantitative determination of linoleic and linolenic acids by conjugation, 4012.

Franzon, O., Ivarsson, G., and Samuelson, O. Determination of calcium in sulphite spent

liquor, 2334.

Fraser, J. R., and Holmes, D. C. Proximate analysis of wheat-flour carbohydrates. IV. Analysis of wholemeal flour and some of its fractions, 2962. Detection of oxidised starches, 4375.

Frazer, R. T. M. Sodium azide as an internal standard for quantitative infra-red analysis,

Fredericks, E. M., Dimbat, M., and Stross, F. H. Carrier gas and sensitivity in gas chromatography.

Fredericks, W. E., and Pristera, F. Infra-red determination of small amounts of dipentaery-Infra-red thritol hexanitrate in PETN [pentaerythritol tetranitrate], 2353.

See also Pristera, F., 4894.
Free, A. H. See Miles Laboratories, Inc., 5353, and Rupe, C. O., 1490.
Free, S. M. [Symposium on quality control. 10th Anniversary Meeting, American Association of Clinical Chemists, Iowa City, U.S.A.] Statistics in clinical chemistry, 849.

Freebairn, H. T. Determination and stabilisation of reduced ascorbic acid in extracts from plant material, 2878.

Freed, V. H. See Montgomery, M., 2501.

Freedman, R. W. Transistorised dead-stop end-

point detector, 1224.

Freegarde, M., and Jones, B. Composite spectrophotometric method for determining molybdenum, vanadium and titanium in low-alloy steels, 539. Simultaneous spectrophotometric determination of ethyl methyl ketone and ethyl acetate, 578. Simultaneous spectrophotometric determination of copper and nickel in low-alloy steels, 3258.

Freeman, E. S. See Anderson, D. A., 2342. Freeman, H. P. See Hill, W. L., 1965. Freeman, J. H. Separation of lanthanides from

mixtures of their chlorides, 63,

Freeman, M. T. See Strickland, R. D., 1513. Freeman, N. K. See Nelson, G. J., 1499, and Smith, L. M., 2455.

Freeman, R., and Pound, R. V. High-resolution N.M.R. spectrometer with the radio frequency controlled by the magnetic field, 4626. Freeman, S. A. See Charnicki, W. F., 3484.

Frehse, H., and Tietz, H. Quantitative determina-tion of arsenic residues in plant materials, 1970. Freimuth, U. See Wöhlert, W., 2976.

Freiser. H. Gas - liquid partition chromatography for metal separations, 1612.

and Morrison, G. H. [Symposium on solvent extraction in the analysis of metals.] Introduction, 4643.

See also Morrison, G. H., 5125.
 Freiskorn, R. See Albers, P., 1062.

Freiwilliques, C., and Leclerq, M. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Determination of nitroalkanes by i.r. spectrography, 2031.

French, D. See Thoma, J. A., 3410.
Frène, A. See Pien, J., 3986.
Frenger, W. See Scheiffarth, F., 4963.
Frenkel', O. D., and Narbutovskii, T. S. Spectrographic determination of copper and calcium in discard slags of the copper-smelting industry, 1271.

Fréon, P. See Henry-Basch, E., 2765.

Fresen, J. A., Gogh, H. van, and Pinxteren, J. A. C. van. Determination of fluoride in drinking water with the aid of an ion-exchange resin, 4025.

Frey, H.-H., Sudendey, F., and Krause, D. Meta-bolism, excretion and identification of barbituratetype hypnotics, 1545. Frey, J. See Enselme, J., 3441.

Freymann, M., Freymann, R., and Libermann, D. Nuclear magnetic resonance of pyridine derivatives, 4367.

Freymann, R. See Freymann, M., 4367.
Frič, F. See Neurath, A. R., 300.
Fridman, I. D., and Yudina, I. N. Extraction and separation of niobium and titanium from oxalate

solutions by ion exchange, 2697.

Fridman, V. M. See Kozan, V. B., 177.

Fried, F. See Glantz, M. D., 611.

Friedberg, F., and O'Dell, M. S. Infra-red spectra of some DNP-α-amino acids, 2894.

Friedel, R. A., Shultz, J. L., and Sharkey, A. G., jun. Mass spectrum of nitric acid, 82.

See also Malli, J., 1231.

Friedemann, T. E., and Dubowski, K. M. Chemical testing procedures for the determination of ethanol, 206.

Friedlander, S., and Goldblatt, A. Comparison of precision for solid-, liquid- and powder-sampling techniques in the X-ray fluorescence analysis of high-temperature alloys, 2245.

Friedli, W. See Schumacher, E., 4651.

Friedman, H. A. Analysis of lithium metal, hydride and hydroxide for nickel, copper, silicon, iron, chromium, aluminium and hydroxide, 3625.

Friedman, L. Vitamin A in oleomargarine, 4497. Friedmann, H. S. Spectrophotometric studies of the Zimmermann reaction, 4977.

Friedrich, K. Influence of column materials on gas-adsorption chromatography with silica gel, 3558

Friedrich, W. See Pawelkiwicz, J., 5463.

Friend, J., and Nakayama, T. O. M. Determination of the constituent components in carotenoid extracts from leaf tissue, 2883.

Fries, R. J. See Kennedy, J. V., 3082. Friesen, G. Biochemical test for determination of the bactericidal power of disinfectants, 4470.

Frieser, E. Quantitative determination of cotton in colton - viscose rayon blends, 3376. Quantitative determination of artificial protein fibres in yarn blends, 4381.

Frieser, R. G., and Scardaville, P. A. Identification of the isomers of phenylenediamine, 4358.

Fripiat, J. J., Vancompernolle, G., and Servais, A. Study of the surface acidity of silicates and aluminosilicates by titration in non-aqueous media, 4706.

Frisch, M. A. See Nuttall, R. L., 5512.
Frish, S. E. See Bochkova, O. P., 2058.
Frishkorn, G. W. See Goldin, A. S., 1677.
Frishman, T. A. See Ginzburg, V. I., 1080.
Frisone, G. J. Trap for liquid fractions separated by gas chromatography, 1205.

Fristrom, G. R., Bennett, L., and Berl, W. G. Integrating monitor for detecting low concentrations of gaseous boron hydrides in air, 2089.

Fritz, J. C. See Wharton, F. D., jun., 1945. Fritz, J. S., and Pietrzyk, D. J. Photometric

titration of scandium, 916. and Richard, M. J. [Second Conference-Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg. Sept. 29 to Oct. 1, 1958.] Colorimetric uranium determination with arsenazo, 335.

- and Schenk, G. H. Acid-catalysed acetylation

of organic hydroxyl groups, 2761. Fröhlich, F. Determination of small amounts of chromium in minerals and rocks with sym.-

diphenylcarbazide, 3219.

Fromm, D., and Oër, A. von. Detection of beryllium and emission-spectrographic detection of mercury vapour in air, 4135.

Fromm, H. J. See Nordlie, R. C., 2880.

Frontero, L. Iodine value of the unsaponifiable matter in the differentiation of olive from other oils, 1574.

Frum, F. S., and Shilov, G. I. Chromotropic acid dyestuffs as reagents for beryllium, 890.

Frumina, N. S. See Mustafin, I. S., 5218.

Fuchs, J. Determination of urea based on the

urea - hypochlorite reaction, 4407.

Fuga, N. A. See Nazarenko, V. A., 4172. Fuhrmann, H. Analytical testing of liquids, 2014. Fujii, I. See Nakai, T., 442, 1694. Fujimori, K. Infra-red spectrum of dimethyl

sulphone, 4832.

Fujimoto, M. Ion-exchange resins as reaction

media for micro-detection tests, 4628.

Fujimoto, R., and Ose, S. Colorimetric determination of ephedrine hydrochloride and ephedrone hydrochloride, 2924.

Fujinaga, T. See Ishibashi, Masayoshi, 1011, 1737, 2078, 2108, 2130, 2578, and Ishibashi, Michihiro.

Fujino, M. See Kuroda, K., 2417.

Fujinuki, T. Extraction of ferric chloride with ethyl acetate, 130.

Fujita, F., Matsushita, H., and Omori, H. Determination of total sulphur in vulcanised rubber by the perchloric acid method, 2348.

Fujiwara, S. See Ishii, K., 2022.

Fukamauchi, H., Enohara, R., and Uehara, M. Analyses by the use of fluorotitanic acid and hydrogen peroxide. IV. Colorimetric determination of stannic tin, 1696.

Enohara, R., Uehara, M., Terui, S., and Tokimoto, Y. Analyses by the use of fluorotitanic acid and hydrogen peroxide. V. Determination of anti-

mony, 1714.

Fukasawa, T., Takabayashi, Y., and Hirano, S. Photometric determination of small amounts of vanadium in various materials by the sodium diphenylaminesulphonate method, 1715.

Fukayama, G. See Michaels, G. D., 2407. Fuke, Y. See Kondo, Akira, 2728.

Fukuda, M. Organic micro-analysis. V. Improved scrubbing reagent for the determination of alkoxyl groups, 1778; VI. Improvement in the micro-determination of alkoxyl groups, 1778. Micro-determination of alkoxyl groups by a new combustion method, 4815.

Fukuda, N. See Noto, T., 258.
Fukuda, T. Studies on vapour-phase chromatography.

III. The effect of support and of stationary liquid on the relative retention value.

and **Omori, T.** Studies on vapour-phase chromatography. IV. Relative retention values of some organic compounds, 4562.

Fukushima, K. See Suzuki, S., 3904. Fukushima, S. Mechanism and elimination of interferences in flame photometry. Experimental methods of investigation, and suppressing effects of aluminium, borate, phosphate and sulphate on calcium radiation, [1], 37; II. Ionisation and mutual interference of alkali elements, 4660.

Fukutomi, T., and Nakahara, M. Modification of a spot test for sulphate ion, 101.

Fülöp, T. See Dezsö, I., 204. Fulton, R. A. See Affens, W. A., 1781.

Funasaka, W. See Ishibashi, Michihiro, 458.
Funk, J. P. Wedge-calibration method for the
Dobson ozone spectrophotometer, 2561.

Furnica, D. See Papafil, E., 372, 4124. Furnica, M. See Papafil, E., 372. Fursenkov, V. A. See Kiseleva, M. S., 2490.

Furukawa, T. Studies on chromatostrips. IX. Effect of the shape of the strips on the R_F value, 806; X. Separation of phenols, aromatic aldehydes, ketones and carboxylic acids with chromatostrips, 806.

Furuki, C. See Mitsui, T., 4542. Furusawa, M., Takeuchi, T., and Kamijo, K. Ultra-violet spectrophotometric determination of quinoline and isoquinoline. I. Choice of solvent, and their simultaneous determination, 2818.

Fuwa, K., Thiers, R. E., and Vallee, B. L. A burner for cyanogen flame spectroscopy, 1618.

Thiers, R. E., Vallee, B. L., and Baker, M. R. Sample flow rate. A critical parameter of spectral excitation in cyanogen - and hydrogen oxygen flames, 3572.

Gabe, I. See Mageru, V., 4512.

Gabucci, G. See Doro, B., 5026. Gacoka, P. See Robinson, J. B. D., 3017. Gadd, K. G. Automatic titration unit for chlorides in biological fluids, 3029.

Gaddis, A. M. See Ellis, R., 3310.
Gade, M., and Luft, K. F. Infra-red spectroscopic determination of quartz in pit dusts, 1038.

Gage, J. C. Indicator tube for the determination of trichloroethylene in air, 1183. Calibration of hand pumps for air sampling, 1597. Efficiency of absorbers in industrial hygiene air analysis, 5038.

Gahler, A. R. See Allan, W. J., 2718. Gainer, A. B. See Page, J. O., 1319. Gaj, A. See Sedzimir, J., 4196. Gál, D. See Dutka, F., 2112.

Gál, H. Analysis of coffee mixtures, 274. Galateanu, I., Maxim, I., and Braun, T. metric titration of zinc and copper with EDTA,

See also Braun, T., 2634.

Galbraith, M. M. See Kohberger, D. L., 3958.
Galdiero, F. See Brancaccio, A., 2906, 2910.
Gallaway, W. S. See White, J. U., 1212.
Galle, A. See Benišek, L., 4870.

Galloway, N. McN. Flame-photometric determination of iron, copper and cobalt in cobalt mattes

and concentrates, 1358.

Gallus-Olender, J. Potentiometric determination of active chlorine, chlorides and chlorates in chlorinated lime, 504.

Galonov, P. P. See Sukhenko, K. A., 3754. Galus, Z. See Kemula, W., 3088, and Michalski, E.,

Gamble, L. W., Price, W. E., and Jones, W. H.

Determination of fluoride in silica - alumina catalyst by steam hydrolysis, 4259.

Gamer, L. S. Adaptation of the immersion refractometer to the determination of extract and alcohol in the brewery, 2986.

Ganchoff, J. See Davis, D. G., 4283. Ganchoff, J. G. See Moore, F. L., 1003. Gandara, I. J. L. O. de la. See Otero de la Gandara, I. J. L.

Gander, G. W. See Jensen, R. G., 1916.
Ganichev, P. A. See Korenman, I. M., 914.
Ganina, V. G. See Korenman, I. M., 915.
Gansel, E. E. Determination of silver in photo-

graphic papers and films by wet ashing, 1457.

Gant, P. L., and Yang, K. Separation of hydrogen isotopes by gas - solid chromatography, 1257.

Gantner, G. Determination of the colour of pickled meat and meat products 5420. meat and meat products, 5429. Gantz, E. St. C. See Fletcher, A. N., 1103.

Garbalinskii, V. A. Determination of hydrogen sulphide in polysulphide hydrocarbon gases, 1819. Garbett, R. D. See Ellis, S. R. M., 1661. Garcia Olmedo, R. See Valdehita, M. T., 2972.

Gard, L. N. Determination of isopropyl 3-chlorophenylcarbamate [CIPC] [chlorpropham] residues in potatoes treated for sprout inhibition, 791.

Gardner, A. W. See Barker, G. C., 4607.
Gardner, J. E., and Dean, S. J. Iodine as a colorimetric reagent. I. Assay methods for caffeine,

Gardner, K. See Dupée, L. F., 5058.
Gardner, M. H. See Macdonald, A., 3857.
Gardner, R. D., and Hues, A. D. Spectrophotometric determination of rhodium in uranium rhodium alloys, 1381.

See also Henicksman, A. L., 3382, and Willard,

H. H., 448.
Garn, S. M. See Yalman, R. G., 894.
Garnett, J. L. See Anderson, J. R. A., 3686.

Garoglio, P. G. Rebelein index as a means of identification of genuine wines, 5441.

Garrido de Bartolomé, A. Spectrochemical analysis of steel by transfer to counter-electrodes, 1006.

Garrigues, C. See Monard, C., 5288. Garton, F. W. J. [International Symposium on Microchemistry. Birmingham, 1958.] Spectrochemical analysis of solutions, 3102.

Garton, W. R. S. See Clarke, F. J. P., 2558. Garzón Ruipérez, L. See Pássera, P., 4704. Gaslini, F., and Nahum, L. Z. Conductimetric

titration of very weak acids, 579.

Gasparič, J., and Matrka, M. Identification of organic compounds. XXIX. The paper chromatography of di- and tri-phenylmethane dyes,

 See also Borecký, J., 5273, and Horák, F., 1893.
 Gaspar y Arnal, T. Colour-contrast reactions for the detection of potassium, ammonium, rubidium and thallium ions, 367.

Gassmann, B. Chemical determination of vitamins, 5453. Chemical determination of riboflavine in (Lumiflavine method), 5459. Chemical determination of thiamine in food, 5460. Chemical determination of the antipellagra vitamin (total nicotinic acid) in food. Cyanogen bromide method, 5461.

and **Scheunert**, **E**. Determination of N methyl-2-pyridone-5-carboxamide in urine, 210. Determination of N1-

Gast, J. H. See Cooper, J. A., 4057.
Gast, P. W. See Catanzaro, E. J., 4711.
Gastaud, J. M. See Maurel, A., 3316.
Gatehouse, B. M., and Walsh, A. Analysis of metallic samples by atomic absorption spectroscopy, 5153.

Gattorta, G., and Servello, V. Flame-photometric determination of exchangeable potassium and sodium in soil, 785.

Gattow, G., and Wendlandt, H.-G. Analytical investigations of pyrolusites. Rapid method for the determination of the composition of MnO1+x products, 4777.

Gaudiano, A. See Cingolani, E., 2031. Gauer, Z. E. See Lelpunskaya, D. I., 1385.

Gauguin, R. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Complexometric determination of aluminium, 2031

Gauthier, P. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Micro-determination of arsenic in pyrites by radiochemistry, 2031.

Gautier, J.-A. Acidimetry in non-aqueous medium. I. Basis of the method, 8.

Gautier, J.-A., Renault, J., and Rabiant, J. Ultra-violet spectrophotometric micro-determination of alkaloids as tetraphenylborides. I. Establishment of the method and description of the spectra, 2917; II. Application to the control of pharmaceutical preparations, 2917.

Gavanescu, D. See Spacu, P., 1256. Gavát, L. M. See Velniceriu, A., 3019. Gavrilov, F. F. Spectral method for the isotopic analysis of lithium, 5145.

Gaziev, G. A. See Oziraner, S. N., 1998.

Gebert, P. See Poethke, W., 1886. Gedalia, I. See Jungreis, E., 4026. Gedda, P.-O. See Karrman, K. J., 874, 875. Geerinck, G., and Hoste, J. Transistorised drop-

counter for chromatographic use, 2525. Geerling, H. See Zijl, H. J. M. van, 3539.

Gegus, E. Spectrochemical analysis of solid samples and solutions, 4074.

Gehrke, C. W., and Johnson, F. J. Spectrophotometric method for direct available phosphoric oxide in fertilisers, 1963.

 Gelderovich, O. I. See Kovalenko, P. N., 2631.
 Geiger, E., Nobs, H., and Halasz, P. Ultra-violet spectrophotometric determination of hydrogen sulphide and carbon disulphide in gases, 956.

Geiger, E. L. Radio-assay of uranium and plutonium in vegetation, soil and water, 289.

Geitner, G. Determination of arsenic in technical sulphuric acid, 90.

Geld, I., and Sternman, I. Colorimetric determination of chloride in concentrated hydrogen peroxide,

Gélébart, F. Method of determining some aminoalcohol esters, 1899.

Geller, J. H., Custer, J. H., and Zittle, C. A. Paper electrophoresis of proteins in acid buffer, 5379. Gellerman, J. L. See Mangold, H. K., 1127. Gel'man, N. E., Korshun, M. O., and Novozhilova,

Analysis of fluoro-organic compounds. The simultaneous micro-determination of fluorine. carbon and hydrogen by means of pyrohydrolysis,

— See also Korshun, M. O., 4307. Gelotte, B. Studies on gel filtration. Sorption properties of the bed material Sephadex, 5489.

Genest, C., and Chapman, R. A. Detection and identification of antimicrobials by paper chromatography, 1569.

Genest, K., and Farmilo, C. G. Micro-estimation of opium alkaloids in pharmaceuticals by paper chromatography, 701.

Genge, C. A. Resin acids. Analysis by mass spectrometer as methyl esters, 2849.

Gengrinovich, A. I., Korneva, L. E., and Murtazaev, A. M. Amperometric titration of phenazone with iodine chloride, 5003.

Genkina, L. A. See Gokhshtein, Ya. P., 2175. Gennaro, A. R., and Osol, A. Infra-red spectrophotometry as a testing procedure of U.S.P. XVI, 243.

Gent, C. M. van. See Böttcher, C. J. F., 2380. Gentil, V. See Caldas, A., 1397, and Feigl, F., 3875.

George, D. A. See Miskus, R., 2502.
Georgiev, D. See Dilov, Kh., 2383.
Geppert, G., and Kipke, L. Spectrophotometry in the near infra-red and its application to the analysis of hydrocarbon mixtures, 2319.

Gerasimova, M. S. See Belokrinitskaya, E. E., 1373. Gere, É. B. -. See B.-Gere, É. Gergely, A. See Szarvas, P., 4198. Gering, R. K. See Thompson, J. F., 669.

Gerkhardt, L. I. Extraction - photometric determination of thorium in natural materials, 2153.

Gerlach, E., and Fikentscher, H. Paper-chromatographic micro elution technique for the isolation and identification of guanine nucleotides from pigeon erythrocytes, 666.

Gerlovin, Y. I., and Slobodskaya, P. V. Opticacoustic method of gas analysis by using cells with a multiple passage of radiation, 5509.

Germain, J. E., and Valadon, F. Oxidation of coal.

II. Determination of benzenepolycarboxylic acids, 4374.

German, A., Duval, M., and Lelue, R. Streptococcal antihyaluronidase. II. Determination of streptococcal antihyaluronidase in serum, 3940.

— See also **Duval**, **M.**, 3940. **Gerner**, **G.**, and **Fischer**, **W.** Quantitative determination of oleandomycin in bile and urine, 1846. Gernet, E. V., and Russkikh, A. A. Determination

of aniline vapour in air, 4018.

Géro, E., and Candido, A. Determination of total ascorbic acid by means of a suspension of Erwinia solanisapra. II. Specificity of the reduction of dehydroascorbic acid by these bacteria, 5467.

Gershuns, A. L. Determination of copper, 5149. and Kalmykov, L. Z. Photometric determination of silver by means of copper thiuramate and thiuram [disulphiram], 4132.

Gerstenfeld, S. See Saifer, A., 3899.

Gessner, T., and Smith, J. N. Comparative detoxica-tion. VIII. Metabolism of chlorobenzene in locusts: phenolic metabolites, a comparison with some vertebrate species. Determination of o-, m- and p-chlorophenol, 5301.

Get'man, T. E. See Babko, A. K., 3221. Getrost, H. See Kohlschütter, H. W., 349. Geyer, R., Doerffel, K., and Kirst, H. Method for

spectro-chemical spot analysis, 4575. and Henze, G. Oxidimetric determination of tungsten after reduction with zinc, 4243.

Gheorghiu, C. See Spacu, P., 4460, 5226. Ghielmetti G., and Bacchini, M. Micro-determina-

tion of cynarin (1:4-dicaffeylquinic acid), 1544.

and Mela, C. Titration of total alkaloids in Tabernanthe iboga roots, 706.

Ghiglione, C. See Dumazert, C., 1200. Ghosh, N. Detection of rhenium with diphenylcarbazide, 516.

Giang, P. A., and Schechter, M. S. Colorimetric determination of residues of phorate and its insecticidally active metabolites, 4536.

Giannerini, G. P. Modification of the Fitelson reaction, 5447

Gianola, G., and Meyer, O. Quantitative determina-tion of Rilsan [nylon] in blends with cotton, 3378.

Gibbons, D. Determination of gold in biological materials by neutron activation analysis, 1469. International Symposium on Microchemistry, Birmingham, 1958.] Determination of submicrogram amounts of cadmium in super-pure zinc by neutron activation analysis, 3102

Giber, J., and Meisel, T. Product-analysis of the gas-phase nitration of methane. Determination of nitromethane in the presence of nitrite, 1797.

Gibson, F. H. See Corey, R. C., 429. Gibson, R. See Corfield, M. C., 2521.

Giddings, J. C., and Keller, R. A. Spot distribution and size in paper chromatography, 3555.

Stewart, G. H., and Ruoff, A. L. Zone migration

in paper chromatography, 5077. See also Keller, R. A., 5078, and Stewart, G. H.,

Gidley, J. A. F., and Jones, J. T. Determination of zinc in metallurgical materials by atomic-absorp-

tion spectrophotometry, 5164.

Gieter, L. See Nielsch, W., 2943, 3352, 3404, 3969.

Gierlowska, J. See Bukowska, H., 5415.

Giese, C. F. Strong focusing ion source for mass spectrometer, 334.

Giesecke, P. See Eiss, M. I., 1782. Giesen, K. See Hegemann, F., 2246.

Giesselmann, G., and Hagedorn, I. Micro-deter-mination of chlorine, bromine and sulphur in organic compounds in a single sample, 4806.

Giger, A., Jacqué, L., and Henniker, J. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956. Characterisation of the benzene nucleus in macromolecules of plastic materials, 2031.

Gil-Av, E. See Pinchas, S., 2807, and Shantai, J., 1438

Gilbert, A. B. Micro-determination of calcium, 395. Gilbert, E., and Grohmann, H. Polarographic determination of lead in grape must and wine, 4005.

Gilbert, G., Stickel, R. M., and Morgan, H. H., jun. Colorimetric determination of carbazole, 3349.

Gilbert, N. See Saltzman, B. E., 2759.

Gildenberg, L. Rapid determination of sulphur in organic compounds, 556.

Gillespie, K. G. See Kane, P. F., 4535.

Gillis, J. See Pijck, J., 3102.

Gilvarg, C. See Tanzer, M. L., 3460. Gimbel, L. S., III, Schwartz, B. W., and Owades, J. L. Lead precipitation and spectrophotometric methods of hop analysis, 2982.

Ginsburg, L. Determination of mono-, di- and triethylene glycols in mixtures by gas-liquid chromatography, 2764.

Ginzburg, L. B., and Shkrobot, E. P. Determination of thallium by ultra-violet absorption of the chloride solution, 3673.

Ginzburg, V. I., and Frishman, T. A. Polarographic determination of small amounts of phenol with a rotating platinum anode, 1080.

Ginzburg, V. L. See Belokrinitskaya, E. E., 1373. Giovanella, B., Manni, C., and Moricca, G. Turbidimetric detection of decamethonium compounds,

Girre, L. See Cormier, M., 2886. Gispert Benach, M. See Otero de la Gandara, I. J. L., 1185.

Giuffre, L., and Capizzi, F. M. Determination of lithium in the presence of aluminium, 2063.

Giurgiu, D. See Bogdan, E., 5251. Given, T., Magee, R. J., and Wilson, C. L. Luminescence spectra from high-frequency excitation. I. The spectra of some inorganic gases, 3612.

Givner, M. L. See Goldzieher, J. W., 5104. Gjessing, L. R. Photo-electric EDTA titration of calcium and magnesium in serum, cerebrospinal fluid and urine, 4397.

Gladner, J. A. See Folk, J. E., 3937.

Gladyshev, B. N. Amino-sugar determination in the hydrolysates of animal, plant and bacterial material, 2384.

Glaister, R. M. See Cameron, J. F., 2821.
 Glantz, M. D., and Fried, F. Micro-separation of tetrazolium salts by paper electrophoresis, 611.

Glasmacher, H. Flame-photometric determination of calcium in blood plasma or in protein solutions containing phosphate, 3390.

Glasner, A., and Steinberg, M. Determination of cerium^{III} oxalate, 2656.

Steinberg, M., and Levy, E. The effect of sulphate ion on the crystal size of precipitated rareearth-metal oxalates, 919.

Glasson, B. See Benakis, A., 3098. Glastonbury, H. A., and Stevenson, M. D. Microestimation of γ -(4-chloro-2-methylphenoxy)-butyric acid [MCPB], γ -(2:4-dichlorophenoxy)butyric acid [2,4DB] and n-butyl γ -(2:4dichlorophenoxy) butyrate in plant material, 1978.

Glazer, W. Simultaneous X-ray diffraction determination of molybdenum and tungsten in admixture, 109.

Glazunov, L. A. See Zhadeev, V. A., 3126. Glebovskaya, E. A., Maksimov, É. I., and Petrov, A. K. Quantitative determination of methylene groups in open-chain compounds containing at least four such groups, 2260.

Glemser, O. See Ziegler, M., 30, 3140, 3714, 4668. Glick, D. See Twedt, R. M., 3933. Glodowski, S. See Kemula, W., 1683.

Glushkova, M. A. See Tananaev, I. V., 2648. Gmelin, R., and Virtanen, A. I. Colour reaction for the paper-chromatographic detection of iodide, iodinated tyrosines and thyronines, 1863.

Gnauer, H. See Woidich, K., 181.
Göbel, E. F., and Roseira, A. N. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956. Methods of analysis of sodium

hydrosulphite [dithionite], 2031.

Göbel, P., Heni, F., and d'Addabo, A. Paper-chromatographic separation and quantitative colorimetric determination of 17-oxosteroids in

urine, 691.

Godard, H. P., and Cooke, W. E. Analysis and composition of aluminium corrosion products, 4159

Goddu, R. F., and Delkar, D. A. Spectra - structure correlations for the near-infra-red region, 4084.

Godfrain, J. C., Bertrand, P., and Liandier, L. Nephelo-colorimetric determination of lactose,

Godfrey, J. C. Determination of the molecular weight of trinitrobenzene complexes, 187.

Gogh, H. van. See Fresen, J. A., 4025.
Gohlke, R. S. See McLafferty, F. W., 3335.
Göhring, E. See Wunderlich, E., 2121.
Gokhshtein, Ya. P., Genkina, L. A., and Demkin, A. M. Determination of niobium in tantalum niobium alloys by means of oscillographic polarography, 2175.

and Kutyreva, G. A. Quantitative determination of ytterbium in the presence of large quantities of erbium by oscillographic polarography, 3178

Goland, A. N., Sondericker, J. H., jun., and Antal, J. J. Synthetic mica as a monochromator for long-wavelength neutrons, 332.

Gold, E. M., Serena, B., and Cook, S. Estimation of cortisol and 11-deoxycortisol in plasma as Porter - Silber chromogens, 4439.

Gold, V. See Blackie, M. S., 342.

Goldbaum, L. R., Williams, M. A., and Koppanyi, T. Determination of glutethimide in biological fluids, 3873.

 See also Dominguez, A. M., 5341.
 Goldberg, C. A. J. Discontinuous buffer system for paper electrophoresis of human haemoglobins, 1515.

Goldberg, G., Meyer, A. S., jun., and White, J. C. Determination of oxides in fluoride salts by hightemperature fluorination with potassium bromotetrafluoride, 4770.

Goldblatt, A. See Friedlander, S., 2245. Goldblatt, E. Application of square-wave polarography to the monitoring of the uranium content of uranium plant solutions, 1734 Goldblatt, L. A. See McCutchon, M. A., 1577.

Goldin, A. S., and Straub, C. P. [Second Conference —Analytical Chemistry in Nuclear Reactor Technology. Part 2. Instrumentation, remotecontrol techniques and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Radiochemical analyses for per[pre]operational surveillance, 3103.

Velten, R. J., and Frishkorn, G. W. Determination of radioactive strontium, 1677.

See also Murthy, G. K., 2458, and Sodd, V. J.,

Goldman, E. Indicator for the mercurimetric chloride determination in potable water, 282.

and Byles, D. Phenol red method for bromide, 2494

Goldstein, A. See Chou, S.-C., 5383.
Goldstein, D. Indicator for the complexometric determination of calcium, 2602.

See also Feigl, F., 4319, 5310.

Goldstein, G., Menis, O., and Manning, D. L. Extraction of thorium with thenovitrifluoroacetone. Effect of acetic acid, 4723.

See also Menis, O., 335.

Goldup, A. See Desty, D. H., 2537. Goldzieher, J. W., Bauld, W. S., Engel, L. L., and Givner, M. L. Recording spectrofluorimeters: two new designs and their evaluation, 5104.

Golkowska, A. See Nowicka-Jankowska, T., 498. Gölles, F. Micro-determination of mixtures of sub-stances with the aid of the critical miscibility temperature, 4589. Critical solution temperatures of some systems with dibasic organic acids, 4826.

Golosova, L. V. Separation of isomeric phthalic acids by partition paper chromatography, 3336. and **Ovakimyan**, G. B. Separation of aromatic

acids by paper chromatography, 4848.

Golovina, A. P. See Alimarin, I. P., 1317. Golubtsova, R. B. Determination of molybdenum in alloys with 8-mercaptoquinoline, 2198. Phase analysis of titanium alloys, 4714.

Golysheva, M. G., and Rabayeva, M. Yu. Determination of vitamin B_{13} by the plate - diffusion

method, 4505.

Gómez, A. O. See Ollero Gómez, A.

Gómez Velasco, H., and Rafols-Rovira, J. M. Complexometric determination of calcium and magnesium in sodium chloride, 1281.

Gómez Vigide, F., and Lago Hermida, A. Production of hydrogen sulphide for analytical purposes from mixtures of sulphur and hydrocarbons, 1236.

Gomišček, S. See Malissa, H., 2611.

Gonter, C. E. See Fassinger, W. P., 1434, and Meagher, W. R., 1974.
Gonzalez, F. A. See Alvarez Gonzalez, F.
Goodhue, E. C. See Berman, S. S., 161.

Goodman, E. I. See Shoolery, J. N., 126. Goodwin, J. F. Total, phospholipid Total, phospholipid and labile phosphorus in serum employing chloric acid and 4-aminodiphenylamine, 5362.

Gopalakrishna, V. V. See Yeddanapalli, L. M., 5325. Goranov, I., Todorov, Y., Skatshokova, X., Hle-barova, M., and Kuzmanova, P. Agar electrophoresis of normal soluble proteins in guinea-pig liver, 2898.

Gorbacheva, A. M., and Grinzaid, E. L. Spectro-

graphic analysis of high-purity mercury, 3654.
Gorbunova, L. B. See Demidov, A. A., 2116.
Gorczyńska, K., Walędziak, H., and Ciecierska-Stoklosa, D. Method of "replacing absorbance coefficients" in the spectrophotometric analysis of binary mixtures. II. Determination of trace amounts of vanadium and iron by the colour reaction with benzohydroxamic acid, 4226.

See also Ciecierska-Stoklosa, D., 4226, and Waledziak, H., 4225.

Gordon, C. F., and Wolfe, A. L. Liquid scintillation counting of aqueous samples 5521.

Gordon, S., and Campbell, C. [Review of fundamental developments in analysis.] Automatic

and recording balances, 5125.

See also Campbell, C., 1220, and Hogan, V. D., 5115.

Gordon, W. A. See Fassel, V. A., 3123.

Gore, R. C. [Review of fundamental developments in analysis.] Infra-red spectroscopy, 5125.

Gore, T. S. See Chaphekar, M. R., 1052. Goremykin, V. E., and Kryukov, P. A. electrode with a sodium function for determining

the concentration of sodium ions, 4119. Glass electrode with a sodium function for the analysis of natural waters, 4514.

Gorfunkel¹, Yu. M. See Efros, S. M., 884. Gorguraki, V. See Jirgensons, B., 1869. Gorin, G. See Katyal, J. M., 231, and Kunkel, R. K.,

Gorlub, O. J. See Sobel, C., 2913. Gorodovýkh, V. E. See Stromberg, A. G., 3690. Görög, S., and Beck, M. Volumetric method for the micro-determination of iron with decinormal potassium permanganate solution, 521.

Gorokhova, A. N. See Alimarin, I. P., 4166. Gorrod, A. R. N. See Waite, R., 1122, 1123. Gorshchenko, Ya. G., Andreeva, M. I., and Babkin,

A. G. Extraction of tantalum and niobium by cyclohexanone from sulphate solutions, 2699.

Gorshkov, V. I., Kuznetsov, I. A., and Panchenkov, G. M. Influence of organic solvents on the chromatographic separation of lithium, sodium and potassium on sulpho-resins, 2065.

Gorshkova, L. S. See Bykov, I. E., 1724, 3691. Górski, A., and Kłoczko, E. Reduction chromatography of cations, 3552.

and Moszczyńska, J. Electrolytic chromatography, 3551.

Gorsuch, T. T. Separation of lead-212 from thorium,

Goryukhina, T. A. Paper-chromatographic determination of histidine or urocanic acid, 1874.

Goryushina, V. G., and Archakova, T. A. V. metric method of determining uranium, 1730.

and Romanova, E. V. Colorimetric determina-tion of zirconium by means of arsenazo III, 5194.

See Bourrillon, R., 1207. Got, R.

Gotô, Hidehiro, Ikeda, S., and Kimura, J. Flamespectrophotometric determination of calcium in cast iron, 531.

Ikeda, S., and Sudô, E. X-ray fluorescence spectrometric analysis. I. Analysis of copperaluminium and silver - aluminium alloys, 3669.

and Kakita, Y. Studies on isobutyl methyl ketone extraction and the determination of metal salts. III. Metal oxinate complexes, 4109.

and Sudô, E. Flame photometry by the organic solvent extraction method. I. Determination of magnesium in aluminium by the isobutyl methyl ketone extraction of oxinate, 2632.

Watanabe, Toshio, and Suzuki, Kyohei. Determination of carbon and sulphur in various ferroalloys with a high-frequency induction furnace, 533.

Gôto, Hiroshi. See Honjo, T., 2743. Goto, K. See Mukai, K., 3667.

Goto, R. See Araki, T., 3813. Gottfried, J., and Jára, V. Deterr germanium in ammonia liquor, 2665. Determination of

Gottschalk, G. Complexometric determination of aluminium with dithizone as indicator, 3662.

Goudswaard, A. Identification of sulphamerazine in the presence of other sulphonamides. 5421.

Goulden, J. D. S. Determination of lactose in separated milk and condensed whey by infra-red absorption, 265. Infra-red spectroscopy of aqueous solutions, 3073. Use of turbidimetric methods for testing homogenised milk, 5021.

Gouveia, A. J. A. de, Gouveia, A. P., and Fonseca, M. H. R. [Fifteenth International Congress of M. H. R. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Colour reaction of ergosterol and 7-dehydro-

cholesterol, 2031.

Gouveia, A. P. See Gouveia, A. J. A. de, 2031.

Govaerts, J. See Guében, G., 3590. Goward, G. W., Reinhold, T. M., and Wiederkehr, V. R. Determination of niobium in uranium niobium alloys, 3212.

See also Burd, R. M., 939, 1343. Elbling, P., 937, 2145, Smith, D. L., 2147, and Wiederkehr, V. R., 3154.

Goya, S. See Momose, T., 3487.

Goyanes, C. B. See Barcia Goyanes, C.

Gracian, J., and Ventura, M. Determination of impurities and "oxidised acids" in sulphur olive oil and its industrial evaluation, 753.

- Vioque, E., and Pilar de la Maza, M. Quantitative estimation of the fatty acids of olive oil, 3516.

Grade, M. R. S. See Almeida, L. de, 2031. Gradinarskaya, M. N. See Bozhevol'nov, E. A.,

Grady, H. J., and Lamar, M. A. Glucose determination by automatic chemical analysis, 4918.

Graff, L. See Toth, J., 2320. Graff, P. R., and Langmyhr, F. J. Spectrophotometric determination of silicon in materials decomposed by hydrofluoric acid. II. Determination of fluorosilicic acid in hydrofluoric acid,

See also Langmyhr, F. J., 2659.

Grafnetterová, J. Amperometric determination of penicillin in urine, 4910.

Graham, H. D., and Whitney, R. McL. Colorimetric determination of sodium lauryl sulphate, 2328.

Graham, O. See Awapara, J., 3898. Graham, R. J. T. See Bark, L. S., 1084. Graham, S. I. See McKinley, W. P., 4533. Gramenitskii, I. N. See Belokrinitskaya, E. E.,

Granatelli, L. See Albert, D. K., 1822.

Grand-Clement, A., Jakovac, Z., Lederer, M., and Pluchet, E. [International Symposium on Microchemistry. Birmingham, 1958.] Paper XVIII. chromatography of inorganic ions. Separations with some solvents containing HF,

Grandi, F., and Salvagnini, L. Polarographic determination of mercury in brines and industrial

waters, 1589.

Waters, 1989.

— See also De Gori, R., 2842.

Granfel'd, A. I. See Shvarts, D. M., 2239.

Grapich, Z. See Hryniewiecka, J., 2803.

Grasshoff, K., and Hahn, H. Polarographic behaviour of molybdenum heteropoly acids. I. The polarography of molybdosilicic acid, 1311; II. Determination of silicon in aluminium alloys, 4703.

— See also Hahn, H., 4188. Gratzer, W. B. See Beaven, G. H., 1616.

Grave, G., and Marotz, R. Experience with directrecording spectrographs in the steel-works laboratory. VIII, 1755.

Grauer, R. C. See Saier, E. L., 2909. Graulier, M. Fluorescence of crystalline substances and solutions excited by X-rays. Application to analysis, 2608.

Graven, W. M. Gas chromatograph. Ionisation by α-particles for detection of the gaseous components in the effluent from a flow reactor, 1203.

Gray, P. R., Clarey, D. H., and Beamer, W. H. Interaction of β -particles with matter. Analysis of hydrocarbons by β-ray backscattering, 3299.

Green, A. L. See Creasey, N. H., 2442.

Green, H. Determination of sulphur in cast iron.

A study of the combustion method with an assessment of the value of vanadium pentoxide as flux, 3757.

Green, J., and Marcinkiewicz, S. Complete analysis of tocopherol mixtures. I. Introduction and an investigation into differential coupling reactions,

279.

See also Edwin, E. E., 4506, Marcinkiewicz, S., 279, and Watt, P. R., 4049.

Green, M. N., Riekstniece, E., Valdes-Diaz, O., and Schwachman, H. Elimination of background staining in the periodic acid - Schiff method for protein-bound carbohydrates in paper electrophoresis, 5380.

Green, N. C., and Monk, P. R. Application of Analmatic batch-handling equipment to the determination of penicillin in fermentation broths,

Greenberg, J., and Hallgren, L. J. Techniques for measuring the infra-red absorption spectra of

fused salts, 5505.

Greendale, A. E. See Love, D. L., 4264.

Greene, J. W., jun. See Touchstone, J. C., 2413.

Greenfield, S. Spectrophotometric determination of silica in the presence of fluorine and phosphorus,

Greenhow, E. J., and Smith, J. W. Non-aqueous titration of phenolic hydroxyl, 1053.

Grefsgård, B. Evaluation of pharmaceutical organic bases with the use of ion exchangers. II, 1167.

Greger, J. See Skaržyński, J., 203. Gréger, K. M., Szmrecsányi, I. V., and Bödi, E. M. Determination of degree of unsaturation of unsaturated polyesters, 4386.

Gregor, I. K., and Martin, R. L. Low-temperature reaction between hydrogen sulphide and sulphur dioxide. Method for analysing milligram quantities of hydrogen sulphide in the presence of

carbon dioxide, 2183.

Gregorowicz, Z. Spectrographic determination of traces of germanium dioxide in brown-coal ash, 428. Colorimetric determination of nickel with dimethylglyoxime, 1375. Redox indicators in trace analysis. Colorimetric determination of copperII with Variamine blue, 3134. Determination of germanium in zinc ore products, 4189.

and Buhl, F. Titrations of mercury II with Variamine blue as redox indicator. Determination of cyanide and mercuric ions, 4150.

and Stoch, J. Mercury I titrations with Variamine blue as redox indicator. Determination of chloride, bromide and mercurous ions, 4771.

— See also **Erdey**, L., 2686. **Greiver**, T. N. Separation of noble metals and tellurium from sulphate solutions obtained from

electrolytic slimes, 5258.

Grendon, H. T., and Lovell, H. L. Versatile die for preparation of potassium bromide windows, 4585. Grenfell, T. C. See Missan, S. R., 3948.

Grenoble, M. E. See Launer, P. J., 4836.

Greze, M. R. See Cauquil, G., 2031.

See Cauquil, G., 2031. See Casson, C. B., 262. Griffin, F. J.

Griffin, H. F. See Casson, C. B., 202.
Griffin, J. M. See Stegemann, H., 4428.
Griffing, M. E., Leacock, C. T., O'Neill, W. R.,
Rozek, A. L., and Smith, G. W. Determination of phosphorus in gasoline. Spectrographic and colorimetric methods, 4866.

Griffiths, B. W., and Logan, J. E. Determination of methenamine [hexamine] and methenamine mandelate by nesslerisation following dilute acid

hydrolysis, 2941.

Griffiths, T. R., Lott, K. A. K., and Symons, M. C. R. Diffuse reflectance spectrophotometry in the ultra-violet using powdered salts, 1621.

Griffiths, V. S. Determination of electrical conductivities using unconventional electrode systems, 1631.

Grifone, L. See Papoff, P., 4598.

Grigorenko, I. N., Olenovich, N. L., and Morozov, A. A. Quantitative determination of zinc by precipitation chromatography, 4146.

Grigor'ev, N. N. See Stolyarov, K. P., 2122, 3613. Grill, L. F. See Long, J. L., 976.

Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Radiochemical micro-determination of impuritiesactive in mineral crystalline luminescence, 2031. Grimaldi, F. S. Determination of niobium in the

parts per million range in rocks, 3712. and Schnepfe, M. Semi-micro determination of combined tantalum and niobium with selenous

acid. 951.

Grimmer, G. See Neuwald, F., 4998. Grimmer, J. Determination of adipic acid in alkyds modified with fatty drying oils, 2858.

— See also Pražák, I., 1634. Grinzaid, E. L., and Korobko, F. D. Spectrographic analysis of high-alloy and complex steel. I. Procedure, 3747; II. Calculation of the diluting effect of third elements, 3747. See also Gorbacheva, A. M., 3654.

Grisenthwaite, R. J. Infra-red spectroscopic analysis of polyester resins, 2343.

Grishin, I. A. See Korenman, I. M., 892. Grishina, T. I. Determination of small amounts of rare-earth elements in praseodymium, neodymium, samarium, terbium, dysprosium, holmium, erbium and thulium preparations, 2107.

Gröger, D. Paper chromatography of clavine alkaloids, 3468.

Grohmann, H. See Gilbert, E., 4005. Grollman, A. See Sambhi, M. P., 4966.

Gronsberg, E. Sh. Determination of xylene in air in the presence of benzene and toluene, 4511.

Gros, P. See Bargeton, D., 5387.

Gross, D. High-voltage paper electrophoresis of organic acids and determination of migration rates, 2280. High-voltage paper electrophoresis of aliphatic amines and related compounds, 3319. Gross, W., and Ambs, E. Identification of adrenaline

and noradrenaline, 5409.

Grossowicz, N. See Yashphe, J., 4947. Groszek, A. J. See Benzole Producers, Ltd., 1609.

Grou, E. See Petrascu, S., 5051. Grove, E. L. See Ting, S. F., 3610. Gruber, K. See Kratzl, K., 1055.

Grubitsch, H. Determination of silica and iron in

chromes ores, 2118.

Halvorsen, K., and Schindler, G. Volumetric determination of molybdenum. Reduction of molybdate ions in a silver reductor, 4756.

Grunbaum, B. W., and Kirk, P. L. Design and use of a refined micro-electrophoresis unit, 5097.

Grünberger, D. See Tykva, R., 3099. Grundinkina, N. P. Quantitative absorption analysis of cadmium sulphate, 401.

Grüne, A. Capillary analysis and paper chromatography, 3106.Grunina, A. N., and Ulezko, A. D. Colorimetric

determination of rhenium in molybdenum concentrates, 520.

Guagnini, O. A., and Vonesch, E. E. Hydroxamic acids. IX. Micro-detection and determination of formic acid and inorganic formates. Application of the method to food products, 1923.

See Chiorboli, P., 1076, and Venturello, Gualandi, C. G., 1015, 2060.

Gubel'bank, S. M., and Lavrinova, E. N. Polarographic determination of copper with solid electrodes, 882.

Gubser, H. Quantitative trace analysis and chro-

matography, 1639.

Gudovich, R. A., and Sukhareva, Z. S. Electro-phoretic control of salt separation of blood serum proteins, 675.

Guében, G., and Govaerts, J. Activation analysis using neutrons from a radium - beryllium source,

Guedes de Carvalho, R. A. See Carvalho, R. A. Guedes de.

Guérin, G., Desbarres, J., and Trémillon, B. Potentiometric and amperometric titrations with EDTA. Mercury and copper as indicator electrodes, 4610.

Guerrero, A. P. See Paneque Guerrero, A.
Guerreschi, L. [Fifteenth International Congress of
Pure and Applied Chemistry. Lisbon, 1956.] Theoretical contribution to the use of radio-

chemical methods in kinetics, 2031.

and Romita, R. Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] The content of chromium of "aluminium black." Use of radioactive chromic anhydride, 2031. Spectrophotometric determination of aluminium and iron with haematoxylin, 2643.

Guest, R. J. See Bouvier, J. A. F., 941. Guffy, J. C., and Miller, G. R. Nuclear magnetic resonance method for analysis of polyphosphoric

acids, 2689.

Guillemin, R., Clayton, G. W., Lipscomb, H. S., and Smith, J. D. Fluorimetric measurement of ratplasma and -adrenal corticosterone concentration,

Guinn, V. P., and Wagner, C. D. Instrumental neutron activation analysis, 5522.

Guiochon, G. See Buzon, J., 1995.

Guldner, W. G. See Beach, A. L., 2576. Gundermann, C. See Diemair, W., 1930, 2471. 4003

Gundlach, H. Flame-photometric determination of strontium in minerals low in strontium, 3150.

Gunina, V. P. See Korenman, I. M., 3168. Günzler, H. Determination of methyl groups in polyethylene, 2853.

Gupta, G. N. See Jacobson, H. I., 3859, and Nigam, I. C., 196.

Gupta, J. G. S. See Sen Gupta, J. G. Gupta, N. See Dutta, A. N., 946. Gupta, P. K. See Verma, M. R., 4361. Guravich, J. L. See Duffie, M. J., 2902. Gur'ev, S. D., and Saraeva, N. F. Determination of

small amounts of calcium and magnesium in metallic lead, 1675.

Gurule, F. T. See Strickland, R. D., 1511, 1513.

Gusev, N. I., Palei, P. N., Sentyurin, I. G., and Sklyarenko, I. S. Glove boxes of new design for work with radioactive substances, 3096.

Gusev, S. I., Kumov, V. I., and Sokolova, E. V. Gravimetric semi-micro determination of vanadium by means of N-(2-hydroxynaphthyl-1-methylene)ethylamine and 2-hydroxynaphthaldoxime, 5213.

Gustin, G. M. Micro-Dumas apparatus for nitrogen

determination, 4807.

Gut, J. See Krupička, J., 4436.

Gutiérrez Amo, P. A., and Martin, D. Potentiometric semi-micro determination of saponification value, 750.

Gutmann, V. See Schöber, G., 4603. Gutterson, M., and Ma, T. S. Micro-titrations of organic bases in non-aqueous solvents, 3810.

Guttman, W. Spectral analysis of solutions in a condensed spark with the help of a rotating spark electrode, 5501.

Becker, H., and Müller-Uri, G. Spectral analysis of solutions using two rotating electrodes, 5099.

Guttmann, S. See Anbar, M., 2182.

Guyer, H. See Kovács, E., 352.
Guymon, J. F., and Crowell, E. A. Chemical determination of alcohol in wines and stillage by dichromate, 1573.

Gwilt, J. R., and Hedley, J. S. Determination of inorganic sulphate in sodium lauryl sulphate, 1420.

and Robertson, A. Constant-delivery-rate burette, 1598.

Gyenes, I. Determination of the hydrochlorides of tertiary amines in anhydrous medium, in the presence of the hydrochlorides of acetylatable amines, 1799. Analytical examination of piperi-

dinomethyltolylpropanone, 4462.

Győrbiró, K. Polarography of beryllium, 5157. Gysel, H. Micro-analysis and applied psychology, 1640.

H

Haahti, E. Siphon device for fraction collection, 4553

Nikkari, T., and Kulonen, E. Ionisation detector for gas chromatography. A modification without radiation source, 5497.

Haak, P. J. van der. See Dirkx, I. P., 5111. Haaland, J. Analysis of aluminium and aluminium-

base alloys by using a d.c. arc, 409. Haas, F. H. de. See Okken, R., 1904. Haase, H.-J. Device for avoiding stoppages in distillations under reduced pressure, 1987.

Habashi, F. Polarographic determination of small amounts of uranium in phosphates with ion exchangers, 2209. Influence of phosphoric acid on the determination of uranium with ammonium thiocyanate, 2210.

See also Jangg, G., 3227.

Häberli, E., and Béguin, E. Ion exchange and spectrophotometry in organic pharmaceutical analysis. II. Simultaneous determination of pyrazolones and alkaloid bases, 3965. **Habermann, E.,** and **Szopa, B.** Quantitative

determination of protein fractions after electro-

phoresis in starch gel, 3439.

Habersbergerová-Jeničková, A., and Cífka, J.

Determination of sulphur-35 in organic substances, 3292.

Habgood, H. W., and Harris, W. E. Retention temperature and column efficiency in programmedtemperature gas chromatography, 5089.

Habreetl, M. Polarographic determination of

molybdenum in steel, 144.

Hachino, H. See Kiba, T., 1338.

Hackenberg, E. See Müller, K. H., 2429.

Hada, H., and Inagaki, M. Determination of glycyrrhizic acid in liquorice, 713. Hadden, N., and Hamner, W. F. Infra-red analysis

of isomeric dicyanobenzene mixtures, 594. Hädicke, M. Derivatives of phenylacetic acid, imidazoline and benzhydryl ether. I. Colour

and precipitation reactions, 1903.

See also Howarka, K., 2954, and Kuntze, M., 2423.

Hadidy, A. El. See El Hadidy, A. Hadjiioannou, T. P. See Malmstadt, H. V., 1270,

Hadorn, H., and Doevelaar, F. S. Colorimetric determination of benzoic acid, 2463.

See also Suter, H., 5010.

Haenel, H. Biological and microbiological methods for the detection of vitamins of the B complex. 5457. Microbiological detection of B vitamins. Methods used in routine analyses, 5458.

Haenni, E. O. See Affens, W. A., 1781.
Haerdi, H. See Monnier, D., 5254.
Haerdi, W., and Monnier, D. Micro-determination of traces of lead in blood or other biological media, 1111.

Vogel, J., Monnier, D., and Wenger, P. E. Macro- and micro-determination of traces of cobalt^{III}. Spectrophotometric determination with nitroso-R salt, 2237.

See also Monnier, D., 546, 1019, 2736, and Vogel,

J., 3764.

Hagedorn, I. See Giesselmann, G., 4806. Hagihara, B., and Lardy, H. A. Method for the separation of orthophosphate from other phosphate compounds, 4734.

Hagstrom, G. R. See Rubins, E. J., 2868.

Hague, J. L. See Machlan, L. A., 4278. Hahn, F. L. Weight burettes, 294. Evaluation of zinc dust, 5163. Complexometric determination of calcium and magnesium: the advantage of reverse titration, 5475.

Hahn, H., and Grasshoff, K. Polarography of molybdosilicic acid, 4188.

See also Grasshoff, K., 1311, 4703.

Hainberger, L. See Kainz, G., 2254, 2516, 2748. Hais, I. M. See Knobloch, E., 2438.

Hajdu, I. Analysis of cosmetic creams, 4878. Hajdu, P. See Haüssler, A., 1467. Hajek, Z. Chromatographic separation of dyestuffs

used in the food industry, 2462. Hájková, M. See Franc, J., 3811. Hake, C. L. See Stewart, R. D., 1482. Haken, J. W. Methods for the determination of ascorbic acid, 5464.

Hakim, A. A. Ultra-micro determination of tryptophan, kynurenine and their derivatives, 1862.

Häkkinen, I. P. T. Modification for washing the benzidine sulphate precipitate in the determination of sulphate, 4752.

Hal'ama, D. Determination of volatile fatty acids with paper chromatography, 1791.

Halasz, P. See Geiger, E., 956. Hales, J. L. Double-beam infra-red grating spectrometer, 1622.

Halfhide, P. F. See Herringshaw, J. F., 4592. Halfter, G. Method for the practical evaluation of

chromatograms with the aid of diapositives,

Halik, M. See Pristera, F., 4894.

Hall, M. E. Polarographic determination of 1:2diaminocyclohexane in hexamethylenediamine, 1077. Polarographic determination of aliphatic aldehydes and ketones as imines, 3309.

Hall, R. A. See Butler, J. R., 4182.Hall, W. K., and Decker, T. S. Phenylhydrazine reagent, 2035.

Haller, A. See Simkova, A., 4882.
Hallgren, B., and Larsson, S. O. Separation and identification of alkoxyglycerols [alkoxypropanediols], 3306.

- Ryhage, R., and Stenhagen, E. Mass spectra of methyl oleate, methyl linoleate and methyl

linolenate, 755.

Hallgren, L. J. See Greenberg, J., 5505.
Halliday, J. See Webster, H. L., 1957.
Halliwell, G. Micro-determination of carbohydrates and proteins, 4928.

Haliman, N. See Puranen, J., 1130. Hallowell, A. L. See Lee, T., 3232. Halmekoski, J. Separation of acetopyrocatechol [3:4-dihydroxyacetophenone] from catechol and some 4-substituted catechol- or guaiacol-type phenols using chelation reactions, 1809. Quantitative spectrophotometric determination of catechol, quinol and resorcinol in aqueous solutions, 4847.

- See also Enkvist, T., 2307. Halpern, Y. S. See Yashphe, J., 4947. Halse, M., and Skogan, O. PAM (picolinaldoxime methiodide), 3111.

Halverson, F. See Hirt, R. C., 3832.
Halverson, K. See Grubitsch, H., 4756.
Halwer, M. See Smith, L. L., 1169, 2908.
Ham, N. S., and Willis, J. B. Vibrational spectra of organic isothiocyanates, 4833. Vibrational

spectra of phenyl thiocyanate and benzoyl

isothiocyanate, 4852. Hamaguchi, H., Hashimoto, J., and Narusawa, Y. Polarogram of yttrium and lanthanum, 917

 Ikeda, N., and Kawashima, T. Preparation of carrier-free lanthanum-140 by electrolysis, 1693.
 Kuroda, R., and Negishi, R. Quantitative spectrochemical determination of minor elements in silicates, 3682.

- Ota, N., and Kawasaki, K. Inorganic components in biological materials. XIII. Determination of

thallium, 5347.

Hamann, V., and Herrmann, A. Determination of aldehydes and ketones in foodstuffs. I. Microtitration following treatment with 2:4-dinitrophenylhydrazine, 5425.

phenylhydrazine, 5429.

Hamdy, M. See Issa, I. M., 906, 2184, 3719, 3722, and Khalifa, H., 3172.

Hames, G. E. See Lockyer, R., 353.

Hamilton, J. B. See Haslam, J., 4383.

Hamilton, J. G., and Dieckert, J. W. Separation of

some steroids by glass-fibre paper chromatography, 235. Separation of some bile acids by glass-fibre paper chromatography, 236.

 See also Muldrey, J. E., jun., 5365.
 Hamilton, P. B., and Anderson, R. A. Ion-exchange chromatography of amino acids. Semi-automatic method of operation with cationic exchange resin

columns, 1857.

Hamilton, R. J. See Eglinton, G., 1393. Hamilton, W. R. Gas-sampling apparatus, 2514. Hamlin, A. G., and Roberts, B. J. Separation of uranium by reversed-phase partition chromatography, 4249.

Hammarberg, G., and Wickberg, B. Paper chromatography of carboxylic acids, 5280.

Hammen, H. H. See Clingman, W. H., jun., 4818.

Hammer, E. See Prey, V., 3494.

Hammer, W. F. See Hadden, N., 594.

Hampl, V., and Dufek, V. Spectrographic determination of tantalum in carbides, 5216.

Hanada, Y., and Kitajima, M. Gas-chromatographic determination of camphor, 4364.

Hanák, J. Semi-micro determination of chromium in steel containing not more than 7% of chromium in the absence of vanadium, 4789.

Hanamura, S. Direct-reading current integrator for coulometric analysis, 3095.

Hancock, C. K. See Jones, L. A., 5114. Handley, R., and Johnson, C. M. Micro-determina-

tion of selenium in biological materials, 3395. Hands, G. C., and Bartlett, A. F. F. Field method for determination of sulphur dioxide in air, 4509.

See also Dixon, B. E., 1058.

Hanewald, K. H. Analysis of fat-soluble vitamins. IV. Discussion of the routine chemical determination of vitamin D, 1944.

Hanka, L. J., Burch, M. R., and Sokolski, W. T. Psicofuranine. IV. Microbiological assay, 1896.

Hanley, J. B. See Tinkler, F. H., 4531. Hanna, J. G., and Jura, J. Determination of trace amounts of inorganic chloride in ethanediol, 2763. and Schramm, H. M. Determination of small

amounts of chloride in ethylene oxide, 2760. Hanna, Z. G. See Rossmanith, K., 1039.

Hannig, E., and Heyroth-Straube-Kögler, Analysis of oxytetracycline, 1895.

Hans, A. Analysis by X-ray fluorescence, 5137. Hansen, P. V., Kauffman, F. L., and Wiedermann,

L. H. Direct spectrophotometric determination of butylated hydroxyanisole in lard and in hardened lard, 1565.

Hansen, R. P., Shorland, F. B., and Cooke, N. J. Isolation and identification of the high-molecularweight saturated fatty acids of butter fat, 272. See also Hawke, J. C., 2487.

Hansen, W. R., Mallett, M. W., and Trzeciak, M. J. Platinum-flux technique for determining oxygen in titanium, 936.

Hanson, A. See Sjoerdsma, A., 3433, and Studnitz,

W. von, 652.

Hara, T. Reagents for the separation and determination of potassium, rubidium and caesium, 1662. Composition of the caesium salt formed by bismuth potassium iodide reagent, 1663. Determination of caesium with bismuth potassium iodide or bismuth sodium iodide reagent, 1664. Determination of caesium in the presence of other alkali-metal elements, 1665. Colorimetric method for the determination of a small amount of caesium, 1666.

See also Ishibashi, Masayoshi, 1263, 1264, 1266.

Harada, T. See Kimura, W., 2839. Harboe, M. Determination of haemoglobin in plasma by near-ultra-violet spectrophotometry, 683.

Harborne, J. B. Chromatography of the flavonoid pigments, 3420.

Harbourn, C. L. A. See Desty, D. H., 3560. Harden, J. C. See Nogare, S. D., 3045. Hardon, H. J., Brunink, H., and Pol, E. W. van der. Determination of 1-naphthyl methylcarbamate

(Sevin) residues in apples, 5056.

Hardonk, M. J. See Vries, G. de, 3643. Hardy, E. E. See Steingiser, S., 1079. Harel, S., Tamari, M., and Klein, C. Spectrophotometric determination of silica by its molybdovanadate complex, 922.

Haresnape, J. N. See Desty, D. H., 4563.

Harger, R. N., and Forney, R. B. Method for detecting and determining ethanediol in body

materials; analytical results in six fatal cases

Harke, W., Schirren, C., and Wehrmann, R. Determination of acetazolamide in human urine using

a diazotisation and coupling procedure, 4913.

Harlow, E. S. See Wartman, W. B., jun., 2425.

Harple, W. W. See Robins, D. M., 5109.

Harpur, R. P. Column chromatography, 3553. Expedients for column chromatography, 5073.

Harris, A. F. See Saiter, A., 653, 3899.
 Harris, D. N., and Davis, F. F. Electrophoresis of nucleic acids in silica gel, 4970.

Harris, E. J. Photomultiplier in the flame-photometric analysis of substances with emission bands in the red, 2570.

Harris, G., and MacWilliam, I. C. Carbohydrates in malting and brewing. IX. Rapid method for estimating the main carbohydrate constituents of worts, 5440.

and Ricketts, R. W. Studies on the non-biological hazes of beers. VIII. Rapid estimation of anthocyanogens in beer, 1929.

Harris, J. C. See Weeks, L. E., 1450. Harris, R. H. See Banasik, O. J., 1571. Harris, W. E. See Habgood, H. W., 5089. Harrison, J. A., and Reid, C. D. Infra-red absorptio-

meter, using interference filters, for analysis of hydrogen fluoride in gaseous mixtures, 834.

Harrison, S. D. See Kirshbaum, A., 708. Harrison, W. Illuminant for the colorimetry of fluorescent materials, 837.

Harrow, L. S. See Pleasants, S. W., 1540. Harter, G. J., Perrine, A. W., and Rodgers, J. F. Determination of nitrogen in zirconium and zirconium-base alloys, 938.

— See also Farrell, R. F., 1702, 2139. Harthon, J. G. L. Influence of copper and EDTA on the alkaline oxidation of adrenaline, 2428.

See also Canbäck, T., 3893.

Hartkamp, H. Photometric determination of vanadium with hydrogen peroxide, 2168. Detection and determination of peroxy groups, 2753. Determination of vanadium by photometric titration, 3207. Photometric determination of small quantities of iron with picolinaldoxime, 3249.

Hartl, A. See Kleber, W., 3994. Hartleif, G., and Kornfeld, H. Experience with direct-recording spectrographs in the steel-works laboratory. II, 1755.

Hartley, A. M., and Asai, R. I. Nitrate determination with 2:6-xylenol reagent, 4516.

Hartley, B. S. See Richmond, V., 3429. Hartley, R. S. See Hobson, B. C., 4872. Hartman, L. Analysis of monoglycerides and free glycerol, 5272.

Hartman, M. D. See Burd, R. M., 939.

Hartmann, Helmut, Hofmann, W., and Ströhl, G. Oxygen determination in zinc and magnesium,

Hartmann, Hilda. See Schneer, A., 4203, 5193.

Hartmann & Braun A.-G. Gas analysis, 1982. Hartong, B. D., and Isebaert, L. Conductimetric determination of a-acids in green hops on the hop farm, 1927.

See also Jansen, H. E., 1928.

Harva, O., Kivalo, P., and Keltakallio, A. Reduction of tailing in gas - liquid chromatography, 1613. Harvey, J. L., Forshee, B. W., and Fletcher, D. G. Determination of starch in paper: a comparison of the TAPPI, the enzymatic and the spectrophotometric methods, 3372.

Hashimoto, J. See Hamaguchi, H., 917.

Hashimoto, S., and Tanaka, R. Determination of traces of cadmium in aluminium, 4161.

Hashimoto, T. See Oda, N., 437.

Hashimoto, Y. See Yanagisawa, S., 4139.

Hashitani, H., and Yamamoto, K. Simultaneous determination of traces of iron and aluminium in sea water, 2498.

See also Motojima, K., 4038.

Hasiński, S. Polarographic determination of trace elements in wheat grains. I. Determination of manganese and zinc, 4521.

Haskin, J. F. See Warren, G. W., 568, 577, 2264.
Haslam, J. Gas chromatography in the plastics industry, 2347. [International Symposium on Microbacheters.] Microchemistry. Birmingham, 1958.] observations on organic analysis, 3102. Microchemistry.

Hamilton, J. B., and Squirrell, D. C. M. Oxygen flask combustion method in the determination of chlorine in polymers, plasticisers and organic compounds, 4383.

Squirrell, D. C. M., and Blackwell, I. G. Determination of calcium and magnesium in water by automatic titration, 4024.

and Udris, J. Identification of nylon and related

polymers by ring paper chromatography, 2848.

Haslett, W. L. See Cho, A. K., 5393.

Hastings, S. H., and Nicholson, D. E. Determination of C₂ to C₁₀ alkylbenzenes. I, 589; II, 2302. Determination of butylbenzenes, 591. Determination of isomeric C, alkylbenzenes, 3324. Determination of 1:3- and 1:4-dimethylbenzenes containing benzophenone, 3327. Determination of benzene and polymethylbenzenes, 4839. mination of C₁₀ alkylbenzenes, 4841.

See also Nicholson, D. E., 590, 2312, 3325, 3326,

3328, 4840.

Hatano, A. See Sobue, H., 562. Hátle, J. See Sedláček, B. A. J., 3510.

Haugaard, G., and Pettinati, J. D. Photometric

milk-fat determination, 2453.

Hausdorff, H. H., and Brenner, N. Gas chromatography. I. Powerful new tool for chemical analysis, 302; II. Instrumentation techniques play a vital role in chemical analysis by gas chromatography, 302; III. Six variables must be considered for effective gas chromatography, 302; IV. Limits in application for gas chromatography, 302.

Hauser, T. R. Specific thermochromic detection of anthracene compounds, 3828

See also Sawicki, E., 1085, 2301, 2797, 3343.
 Hauser, W., and Berger, W. Contribution to the chemical evaluation of digitalis drugs (D. purpurea

and D. lanata). II, 1542.

Häusermann, M. See Waltz, P., 705.

Hauss, W. H., and Krickau, G. Paper-chromatographic analysis of long-chain fatty acids in human serum, 2884.

Häussler, A., and Hajdu, P. Flame-photometric determination of sodium, potassium and calcium in serum and urine with special consideration of

errors due to interference, 1467.

Havelka, S., and Rakovič, M. Radiometric determination of potassium in industrial fertilisers, 3018.

Micro-determination of potassium, rubidium and caesium with sodium tetraphenylboron by indirect potentiometric titration, 4122. Conductimetric titration of caesium with antimony trichloride, 4663.

and Křivánek, M. Indirect radiometric determination of potassium, rubidium and caesium

with sodium tetraphenylboron, 2621. See also Přibyl, M., 2253.

Havlik, B. R., Marshall, L. M., and Lodge, J. P. Morphological identification of some organic acids as the sodium salts, 3312.

Havránková, J., and Volf, J. Photometric determination of mercury in air, 771.

See also Volf, J., 503. wes. W. W. See Branson, J. J., 3103. Hawes, W. W. See Branson, J. J., 3103. Hawke, J. C., Hansen, R. P., and Shorland, F. B. Gas-liquid chromatography: retention volumes of the methyl esters of fatty acids, with special reference to normal odd-numbered, iso and (+)-anteiso acids, 2487.

Hawker, C. D., Margraf, H. W., and Weichselbaum, Use of isonicotinic acid hydrazide [isoniazid] as a reagent for the determination of

certain flavonoids, 3888.

Hawkings, R. C. See Merritt, W. F., 4749.

Hawkins, J. E., and Vogh, J. W. Application of optical polarimetry and density measurements to the analysis of a ternary mixture, 4858.

Hawkins, J. M. See Chipault, J. R., 4495.
Hawkins, J. M. See Chipault, J. R., 4495.
Hawthorne, M. F. See Strahm, R. D., 4688.
Hayakawa, H. Electro-analysis by the use of EDTA. II, III. Determination of bismuth and lead, 3709; IV, V. Determination of silver and mercury, 3709.

Hayami, T. See Emi, K., 2219.
Hayashi, K., Danzuka, T., and Ueno, Keihei.
Spectrophotometric determination of fluoride using lanthanum chloranilate, 5240.

Hayashi, S. See Ishii, K., 2022. Haycock, R. P., Sheth, P. B., Connolly, R. J., and Mader, W. J. Micro-determination of reserpine in feeds with nitrous acid, 1968.

Sheth, P. B., and Mader, W. J. Spectrophotofluorimetry of reserpine, other rauwolfia alkaloids and related compounds, 1891.

Hayek, E. Adsorption and precipitation chromatography of inorganic compounds, 1249.

Hayes, J. R. See Callicoat, D. L., 1295.

Hayes, O. B. Qualitative inorganic analysis. XV. Detection of carbon monoxide, 4697.

Haynes, C. M. See Pleasants, S. W., 1540. Haynes, W. C. See Shekleton, M. C., 2394. Hazel, J. F. See Swann, W. B., 3655, and Warren, R. J., 2170.

Head, W. F., jun. Polarography of gibberellic acid,

Healy, C. See Osmond, R. G., 283. Healy, M. K. See Fornwalt, D. E., 335. Healy, T. V., and Davies, B. L. Separation of fission-product caesium by zirconium phosphate, 370.

Heath, H. See Hoare, D. S., 3936. Hecht, F. See Korkisch, J., 780, 4245, Leeb, A. J., 376, and Pfeifer, V., 4759.

Hedley, J. S. See Gwilt, J. R., 1420. Hedrick, G. W. See Parkin, B. A., 804. Heerspink, W., and Kampen, E. J. van. Quick and anaerobic pH measurements of blood at 37°, 2581. Hees, W. van, and Early, E. Mott's method for the

determination of pyritic sulphur in coal, 1823. Hegedüs, A. J. Flame analysis, 857.

Neugebauer, J., and Dvorszky, M. Flame-photometric micro-determination of sodium, potassium and calcium in tungsten metal and tungsten oxides, 110.

— See also Pungor, E., 3638. Hegedüs-Wein, I. See Proszt, J., 4184.

Hegemann, F., Giesen, K., and Kostyra, H. Spectrographic determination of secondary and trace elements in coal without previous ashing, 2246.

Heidelberger, C. See Ludwig, H., 5083. Heiligenthal, A. See Diemair, W., 3992. Heinerth, E., and Pollerberg, J. Paper-chromatographic separation of alkanolamines in detergent powders, 1448.

Heinonen, E. See Kenttämaa, J., 2047. Heinrich, M. R., Dewey, V. C., and Kidder, G. W. Chromatography of pteroylglutamic acid [folic acid) and related compounds on ion-exchange resins, 764.

Helbert, J. R., and Brown, K. D. Influence of amino acids upon the anthrone reaction of uronic acids, 2395.

Helbig. Potentiometric determination of uranium, 5231.

Held. S. Spectrochemical determination of uranium in silicate minerals rich in other rare elements. Spectrochemical determination of lanthanum and scandium in standard granite G1 by the method of addition, 5181.

See also Skalska, S., 38, and Swietosławska, J.,

Helf, S., White, C. G., and Shelley, R. N. Radioassay of finely divided solids by suspension in a gel scintillator, 4620.

Heller, K., and Wagner, U. Quantitative infra-red spectral analysis of solid organic compounds, 165.

Hellström, N. Determination of sugars by means of paper chromatography, 5274.

Helmholz, H. R., and Schneider, R. A. Analysis of trace activities of cobalt-60 in Hanford-treated waste solutions, 1021.

Helmstaedter, G. Application of chelatometry to the determination of nitrogen-containing drugs, 1549. Analysis of mandelic acid compounds used in medicine, 1550.

Heming, A. E. See Maass, A. R., 1484. Hemmings, A. W. See Tata, J. R., 5076.

Hempel, H., and Kirschnek, H. Ion exchangers for the separation of capillary-active substances, with special reference to cation-active and non-ionic compounds, 1449.

Hems, G. Mildly alkaline (pH 8) solvent for the isolation, by paper chromatography, of purines, pyrimidines and their nucleosides and nucleotides,

Hems, R. See Bassham, J. A., 3446

Henderson, S. R., and Snyder, L. J. Adsorption cell and cell-compartment cover for the Beckman Model DU spectrophotometer, 3569.

Hengeveld, J. F. See Asselbergs, C. J., 5488.
Heni, F. See Göbel, P., 691.
Henicksman, A. L., Van Kooten, E. H., Gardner, R. D., and Ashley, W. H. Determination of chlorine in polyurethane plastic, 3382.

Hennart, C., and Merlin, E. Application of chelato-

metry to the volumetric determination of diacetyl, 1796

Henneberg, D. Mass-spectrographic determination of substances separated by gas chromatography, 3592

— See also **Schomburg**, **G.**, 2790. **Henneberg**, **M.**, and **Horak**, **P.** Colorimetric method for determining rhaponticin in underground parts of rhubarb after chromatographic separation, 249.

Henner, E. B. See Childs, C. E., 4801. Hennig, K., and Lay, A. Rebelein method for distinguishing naturally pure and sweetened wines, 5027.

Henniker, J. See Dubois, P., 2031, and Giger, A., 2031.

Hennix, S. See Jacobson, H. I., 3859. Henry, R., and Thevenet, M. Determination for pregnanediol, pregnanetriol and 20-oxopregnanediol in urine, 3451.

See also Margotte-Boy, G., 3423.

Henry, R. J. Symposium on quality control. 10th Anniversary Meeting, American Association of Clinical Chemists, Iowa City, U.S.A.] of the control chart in clinical chemistry, 849.

- and Chiamori, N. Variation of pH of clinical samples as a source of error in enzyme determina-

tions, 1527

- Chiamori, N., and Ware, A. G. Determination of bromosulphonephthalein in serum by means of acetone precipitation of proteins, 2366.

— See also Chiamori, N., 1147, and Sobel, C., 2913. Henry, W. M. See Milner, G. W. C., 2075. Henry-Basch, E., and Fréon, P. Determination of penta-substituted glycerols by periodic oxidation, 2765

Hensley, A. L. Colorimetric determination of traces of acids in dimethyl terephthalate, 4856.

Henze, G. See Geyer, R., 4243. Heotis, J. P., and Cavett, J. W. Colour reaction for determination of some m-dinitro aromatic compounds, 3340.

Hepfinger, N. See Arnett, E. M., 4656.

Herb, S. F., Magidman, P., and Riemenschneider,
R. W. Analysis of fats and oils by gas-liquid chromatography and by ultra-violet spectrophotometry, 5028.

Herbain, M. Pipette with a removable reservoir for use in micro-deproteinisations, 1194. Determination of blood cholesterol by colorimetry of the digitonide. Operating improvements, particularly in the case of high hyperlipaemias, 1522.

and Bertin, D. Radioactive sub-micro determination of urea by the method of Velluz and Bertin, with labelled [9-14C]xanthhydrol. Biological applications, 1119. Multi-purpose microseparator. Application to radioactivity measurements, 1227.

Herberg, R. J. Determination of carbon-14 and tritium in blood and other whole tissues. Liquid scintillation counting of tissues, 3860.

Herbert, V. See Baker, H., 1125.
Herbo, C., and Sigalla, J. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Principles of absorptiometric iodimetry, 2031.

Herbstein, F. H., Smuts, J., and Van Niekerk, J. N.
Quantitative analysis of Fischer - Tropsch catalysts by X-ray diffraction. Determination of alpha-iron, magnetite and iron carbides, 3744

Hercules, D. M., and Rogers, L. B. Absorption and fluorescence spectra of some mono- and di-

hydroxynaphthalenes, 1440.

Heric, E. L. High-frequency methods in determining the composition of heterogeneous ternary liquid systems, 1045.

Hering, H. Measurement of the purity of graphite and heavy water, 4696.

Herington, E. F. G. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Analytical applications of organic complexes containing the pentacyanoferrate group, 2031. Zone melting, 3108.

Herling, J. See Pinchas, S., 2807, and Shantai, J., 1438

Herman, D. See Krajčinović, M., 2825. Hermida, A. L. See Lago Hermida, A. Herout, V. See Lukeš, V., 5494. Herr, W. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Determination of the \(\beta\)-radioactive elements Re, Tc and Lu and their disintegration products in minerals, 2031.

Herr. W., Schmidt, F., and Stöcklin, G. Radio-gaschromatography of neutron-irradiated alkyl halides and identification of recoil reaction products, 2758.

Herre, F. See Hoffmann, K., 2618.

Herrero Maisterra, J. Determination of copper in chalcopyrite concentrates, 378.

Herrig, H. See Brieskorn, C. H., 2408, 2901.

Herringshaw, J. F., and Halfhide, P. F. Potentiostat for electro-gravimetric analysis, 4592.

Herrington, J., and Steed, K. C. Spectrophotometric determination of the rare-earth elements, yttrium and cerium by bromopyrogallol red, 4178

Herrmann, A. See Hamann, V., 5425, and Skaupy,

Herrmann, G. See Kleemann, E., 4755. Herrmann, K. Catechins and catechin-tannins and their significance in foods, 1912.

Herrmann, M. Cathode-ray polarograph, 4604. Herrmann, R., and Rick, W. Flame-spectrophotometric serum calcium analyses by the addition of EDTA, 2356.

Herrmann, R. A. See Shen, C. Y., 5072. Hersch, P. Galvanic analysis. Continuous determination of trace amounts of oxygen and hydrogen, 464. [International Symposium on Microchemistry. Birmingham, 1958.] Micro-determination of molecular hydrogen by galvanic analysis, 3102. Herscher, L. W.

Double-beam automatic prismgrating infra-red spectrophotometer, 4081.

Hertz, C. H., and Siesjö, B. Electrode for continuous measurement of pCO₂ in liquids and tissue, 2874.

Heslinga, F. J. M. See Riemersma, J. C., 4880. Heslop, W. R., Ketelaar, J. A. A., and Büchler, A. Contaminant absorption bands in the infra-red spectra of inorganic fluorides, 5242.

Hess, W. C. See Papadopoulos, N. M., 4926, 4961.
Hessler, L. E. Colorimetric method for determination of fructose, 1063.

Hessling, H. See Radmacher, W., 194.

Hetman, J. Cathode-ray polarograph in the analysis of explosives. Determination of mercury fulminate, 3856. Determination of traces of cyanide in water by cathode-ray polarography, 4027. Determination of copper and iron in high-purity aluminium using the K 1000 cathode-ray polarograph, 5177.

Hetnarska, K., and Piotrowski, S. Assay of technical di-(2-chloroethoxy) methane, 4320.

See also Hetnarski, B., 2258, 5291, and Wiechec. L., 3541.

Hetnarski, B., and Hetnarska, K. Identification of alkyl(aryl)mercury radicals and quantitative determination of mercury in N-organomercury compounds, 2258. Identification of alkyl(aryl)mercury groups and quantitative determination of mercury in N-organomercury compounds, 5291.

Hettwer, E. See Bode, H., 4754. Hetzel, C. A. See Ellis, G. H., 645. Heukelekian, H. See Katz, S., 2493. Heumann, F. K. Analysis of hydrogen - tritium mixtures by the thermal-conductivity method,

- and Altamari, L. A. Second Conference— Analytical Chemistry in Nuclear Reactor Technology. Gatlinburg, 1958.] Determination of hydrogen in irradiated reactor materials, 3103.

Heuschkel, G., Wolny, J., and Skoczowski, S. Determination of traces of propyne and propadiene in cracked gases by gas chromatography,

Hewaidy, I. F. See Issa, I. M., 2721.

Heyn, A. H. A., and Banerjee, G., Ultra-violet spectrophotometric determination of uranium, 4761.

- and Finston, H. L. Separation of magnesium from sodium and potassium, 4138

Heyndryckx, P. See Lacourt, A., 399, 4647. Heyns, K. Methods of analysis for starch and starch hydrolysis products, 2275.

Heyroth-Straube-Kögler, H. See Hanning, E.,

1895

Heyrovský, A. Titration of aromatic boron compounds with mercuric ions, 4853.

Heyrovský, J. Bibliography of publications dealing with the polarographic method in 1958, 1248. Hibbits, J. O., Cooper, S. S., and Menke, M. R.

X-ray absorption measurements, 2568.

- Davis, W. F., and Menke, M. R. Analysis of yttrium metal and yttrium oxide. I. Copper, nickel, iron and molybdenum, 2109; II. Titanium, 2128. Analysis of beryllium and beryllium oxide. I. Determination of iron, 4673; II. The determination of copper, 5158.

Davis, W. F., Menke, M. R., and Kallman, S.
 Analysis of beryllium and beryllium oxide. III.

Determination of molybdenum, 5158. See also Keily, H. J., 1245, 1725

Hibbs, L. E., and Wilkins, D. H. Coulometric determination of sulphur in silicon-iron, 136.

See also Wilkins, D. H., 1268. Hibbs, L. E., jun. See Wilkins, D. H., 541. Hickman, H. M. See Link, W. E., 1942. Hicks, G. P. See Malmstadt, H. V., 4916, 5064.

Hidalgo, A. Infra-red a spectra of diphenyl, 185. Infra-red absorption and Raman

and Otero, C. Infra-red absorption spectra of

phenol and dihydric phenols, 5300. Hidi, P., and Nicholson, R. I. Determination of the ionic calcium content of clarified cane juice, 4472.

Hiepler, E. Determination of heparin in blood, 3415.

Hietala, P. K. Separation of chemical compounds by liquid - liquid extraction, 4043.

Higgins, C. E., and Baldwin, W. H. Refractometric determination of mutual solubility as a function of temperature. Tributylphosphine oxide and water, 4344. Effect of centrifugation on solution temperature and solubility of tributyl phosphate

and tributylphosphine oxide in water, 4345.

Higgins, J. Method for measuring the moisture content of air, 1949.

Higuchi, S. Determination of dicyclopentadiene by the Ritter - Gude method, 3836.

Higuchi, T., Sokoloski, T. D., and Schroeter, L. C. Determination of epinephrine [adrenaline] in the presence of degradation products, 2927.

See also Connors, K. A., 3621, 3809.

Hikime, S., Yoshida, Hitoshi, and Uzumasa, Y.

Separation of tellurium^{IV} and iron^{III} by extraction

with tributyl phosphate, 3721.

Hilburn, J. M. See Dubbs, C. A., 4978.

Hildebrand, G. P. See Reilley, C. N., 3070.

Hildebrand, H., and Diehl, W. Experience with

direct-recording spectrographs in the steel-works laboratory. X, 4274

Hilf, R., Castano, F. F., and Lightbourn, G. A. Identification of alkaloids and related compounds by paper chromatography and ultra-violet spectrophotometry, 3944.

Lightbourn, G. A., and Castano, F. F. Identification of barbiturates by paper chromatography,

Hilger & Watts, Ltd. Quantitative spectroscopic analysis, 4579.

Hill, A. G. See Quatermain, P. G., 4751.

Hill, C. R. See Mayneord, W. V., 1479. Hill, J. A., and Murphy, C. B. Infra-red heating applied to differential thermal analysis, 1630.

Hill, R. V. See Lacy, J., 2263. Hill, W. L., Yee, J. Y., and Freeman, H. P. A water problem in sampling and analysis of triple superphosphate, 1965.

Hillegas, A. G. See Kohberger, D. L., 3958.

Hills, G. J., and Oxley, J. E. Polarography in melts,

Hilton, C. L. Determining the bound styrene in styrene - butadiene copolymers, 1100. Colorimetric identification and estimation of phenolic antioxidants, 4893.

Himes, J. B., and Metcalfe, L. D. Determination of amino acids by high-temperature paper chromatography, 1136.

Hintenberger, H. See Voshage, H., 2623. Hinton, C. L. Determination of hydroxyl numbers by near-infra-red absorption, 2344.

Hirai, E. See Mizukami, S., 3486. Hirano, S., and Sasuga, H. Analysis of magnetite, pyrite and chalcopyrite in sulphide ores with a Geiger-counter X-ray diffractometer, 3775. See also Fukasawa, T., 1715.

Hirata, A. A., and Appleman, D. Micro-determination of phosphate in the range of 1 to 10 micrograms, 3392.

Hirn, C. F., and Lucchesi, C. A. Determination of zirconium in zirconium driers. EDTA titration in 1 to 4 sulphuric acid, 1325.

Hirokawa, K. Differential spectrophotometric determination of copper in copper alloys, 374.

Hirschmuller, H. See Horning, H., 3492.
Hirsjärvi, V. P., Kenttämaa, E., Suurinkeroinen, M.,
Aimonen, B., and Martti, R. Determination of fluorine in the presence of some interfering ions, 3236.

Salovius, B., and Uosukainen, M. Volumetric determination of small amounts of iron, 4267. See also Salovius, B., 4780.

Hirst, L. L., jun. See Karr, C., jun., 4867. Hirt, R. C. [Review of fundamental developments in analysis.] Ultra-violet spectrometry, 5125.

Halverson, F., and King, F. T. Ultra-violet absorption spectra of derivatives of symmetric triazine. III. The guanylmelamines [amidinomelamines], 3832.

See also Dutton, W. L., 3062.

Hisada, M., and Kashikawa, K. Determination of zinc in ores by the use of an anion-exchange resin, 1680.

Hissel, J., and Pire, J. Micro-determination of dissolved oxygen in boiler waters by constantcurrent coulometry. I, 1959. See also Massart, R., 1959.

Hitchins, R. G. See Cook, A. H., 2554. Hively, R. A. Identification of hydrocarbons by gas chromatography, 5267.

Hiebarova, M. See Goranov, I., 2898. Ho, M. See White, C. E., 5105. Hoard, D. E. Applicability of formol titration to the

problem of end-group determinations in polynucleotides, 4968

Hoare, D. S., and Heath, H. Biosynthesis of por-phyrins from porphobilinogen by Rhodospeudomonas spheroides. II. Partial purification and some properties of porphobilinogen deaminase and uroporphyrinogen decarboxylase. Determination of the decarboxylase, 3936.

Hoather, R. C., and Rackham, R. F. nitrogen in water and sewage effluents observed by ultra-violet spectrophotometry, 1958.

Hobbs, A. P. Analysis of natural gas samples by vapour-phase chromatography, 1816. [Review of fundamental developments in analysis.] Gas analysis, 5125.

Hobbs, B. B. See Feldman, C., 3103. Hobson, B. C., and Hartley, R. S. Method for determining non-ionic surface-active agents in oils and solvent extracts from wool, 4872.

Hobson, F., and Stephenson, W. H. Determination of magnesium oxide and silica in magnesium trisilicate and calcined magnesite, 1279.

Hobson-Frohock, A. Effect of water on the deter-

mination of tocopherols, 1948.

Hocke, H. See Böhme, H., 2961, 4992. Hodecker, J. H. See Tuckerman, M. M., 3294. Hodges, R. See Eglinton, G., 1393.

Hodos, M. See Ballezo, H., 895, 4231

Hodsman, G. F. [International Symposium on Microchemistry. Birmingham, 1958.] Reliability

of microchemical weighing, 3102.
oeksema, H. See Eble, T. E., 1896, and Forist, Hoeksema, H. A. A., 3406.

Höfer, M. See Doležal, J., 2867, 2956. Hoffman, A. J., and Ludwig, B. J. Colorimetric method for the determination of meprobamate in biological fluids, 3402.

Hoffman, C. W. W. See Ropp, R. C., 898.

Hoffman, D., and Wynder, E. L. Determination of carcinogenic aromatic hydrocarbons, 4348.

Hoffman, I., and Rowsome, M. Bromide-distillation method for determining arsenic, 4218.

Schnitzer, M., and Wright, J. R. Application of thermogravimetry to the analysis of carbonates occurring in soils. II. Analysis of carbonates in soils, 5046.

See also Wright, J. R., 5046.

Hoffman, J. L. Evolution of certified reference materials, 3109.

Hoffmann, E. Mercurimetry in the quantitative micro-analysis of iodides, cyanides and sulphides in solution and of hydrocyanic acid and hydrogen sulphide in gases, 2051. Determination of microgram quantities of some phenylmercury compounds and their separation from inorganic mercury salts, 4854. Analysis of lead in a paint film. 5331.

Hoffmann, K., and Herre, F. Absorption measurements using soft X-rays for the determination of

argon in synthesis gas, 2618. Hoffmann, R. Water determinations in white

sugars according to the Karl Fischer titration method, 3490. See Hartmann, Helmut, 97, and

Hofmann, W. See Umland, F., 4676.

Holmeister, E. See Schormüller, J., 3902. Holsass, H. See Baumgarten, S., 20. Holstee, B. H. J. Non-logarithmic linear titration curves, 3605.

Hogan, V. D., and Gordon, S. Apparatus for observing physical changes at elevated temperatures. Application to differential thermal analysis,

Hogg, C. K. See Meites, S., 1497. Högl, O. See Padmoyo, M., 266. Holasek, A. See Dugandžic, M., 1842. Holdowsky, S. See Bowman, F. W., 3955. Holeček, V. Determination of sulphaemoglobin in blood, 684

Holeyšovská-Kozáková, H. Determination of strontium in biological materials, 1844.

Holeyšovský, V. See Mikeš, O., 1602. Holleman, J. W. See Biserte, G., 673. Holleman-Dehove, J. See Biserte, G., 673. Höller, H. See Formanek, K., 3112.

Höller, P. Experience with direct-recording spectrographs in the steel-works laboratory. VII, 1755

Hollibaugh, F. D. See Van Aman, R. E., 2691.
Hollibaugh, A. K. See Crighton, J., 4837.
Hollinger, N. F., Austin, E., Chandler, D., and Lansing, R. K. Cholesterol methodology and

application to population surveys, 1521.

Hollingshead, R. G. W. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956. Oxine and its derivatives. The sensitivity and selectivity of some 7-substituted 8-hydroxyquinoline-5-sulphonic acids and some 2-substituted 8-hydroxyquinoline-4-carboxylic acids towards certain metals, 2031.

Holmes, D. C. See Fraser, J. R., 2962, 4375. Holmes, G. W., and Kurth, E. F. Determination of holocellulose, 2845.

Holmes, R., and Wolfe, S. W. Effect of carboxymethylcellulose on the electrophoresis of serum proteins on paper, 5381.

Holmgren, A., and Pernow, B. Spectrophotometric measurement of oxygen saturation of blood in the determination of cardiac output. A comparison with the Van Slyke method, 4395.

Holness, H., and Stone, W. R. Systematic scheme of semi-micro qualitative analysis for anionic surface-active agents. An addendum, 617.

Holt, B. D. Determination of silicon by distillation colorimetric method, 3681.

Holt, K. E. See Paulsen, T. M., 5014. Holt, T. E. See Shaw, W. H. C., 2031. Holtkamp, F. See Shnston, G. W., 1476. Holtman, D. F. See Burns, J., 1160. Holtz, A. H. Standardisation of clinical - chemical

methods, 3387.

Holzbecher, Z. Phosphorimetry, 2013.

Holzer, S. See Bril, K. Y., 1326. Hommes, F. A. Quantitative determination of haptoglobin, 1514.

Honda, M. See Minami, E., 2031

Honegger, C. G., and Honegger, R. Determination of 2-dimethylaminoethanol in animal-tissue extracts. 1488.

Honegger, R. See Honegger, C. G., 1488. Hongslo, T. See Langmyhr, F. J., 5215.

Honjo, T., Gôto, Hiroshi, and Watabe, Y. Rapid analysis of magnesia clinker for basic refractories by the EDTA method, 2743.

Hood, M. See Jacquez, J. A., 3391. Hoogeveen, J. T. See Hooghwinkel, G. J. M., 1498, and Jong, H. G. Bungenberg de, 4557.

Hooghwinkel, G. J. M., Hoogeveen, J. T., Lexmond, M. J., and Jong, H. G. Bungenberg de. Spot tests for phospholipids and their use in paper chromatography, 1498.

Horáček, J., Körbl, J., and Pechanec, V. Determination of carbon and hydrogen in organic compounds. II. Efficiency of combustion catalysts, 4304.

 See also Malkus, Z., 5025.
 Horák, F., Gašperik, J., Šafář, J., and Peizová, H. Gravimetric determination of insulin. The study of initiating gels, 1893.

Horák, M., and Plíva, J. Detection of conjugated methylene-lactones by infra-red spectroscopy, 3889.

Horak, P. See Henneberg, M., 249. Hörhammer, L., Wagner, Hildebert, and Richter, G. Paper-chromatographic separation of phosphatides. I, 5361. Hori, T. See Yamaguchi, S., 140.

Horka, J. See Melichar, B., 2443.

Horn, G. Direct-recording electronic polarograph.

Horn, V. See Boguth, W., 5350. Horning, E. C., Moscatelli, E. A., and Sweeley, C. C. Polyester liquid phases in gas - liquid chromatography, 816.

Horning, H., and Hirschmuller, H. Determination of the sucrose content in sugar beet by the isotope-

dilution method, 3492.

Hornstein, I., Alford, J. A., Elliott, L. E., and Crowe, P. F. Determination of free fatty acids in fat,

- Elliott, L. E., and Crowe, P. F. Gas-chromatographic separation of long-chain fatty-acid methyl esters on poly(vinyl acetate), 3521. Horoi, K. See Ogata, H., 34.

Horrocks, E. See Levine, J., 5406. Horsley, M. See Nicholson, R. I., 2446.

Horsiey, M. See Richolson, B. 1, 4740.

Horton, A. D. See Feldman, C., 3103.

Horyna, J., and Jehlička, V. Nitration of naphthalenesulphonic acids. I. Polarography of mononitro derivatives of naphthalene-1:5- and -1: 6-disulphonic acids, 2811.

Hošala, J. See Jelínek, A., 4262.
Hoshino, M., and Kuriyama, M.
"OS-dibenzoylthiamine" and "thiamine 2hydroxyethyl disulphide", 760.

Hoshino, Y. Separation of a trace amount of hafnium from zirconium with cation-exchange resin, 443. Spectrophotometric determination of traces of zirconium and hafnium with Alizarin red S. 2135.

Hosking, Z. D. See Cox, C. P., 737. Hoste, J. See Geerinck, G., 2525, Pijck, J., 3102,

and Speecke, A., 2175.

Hostomský, J., Tölgyessy, J., and Kriváň, V.

Radiometric determination of carboxyl groups in cellulose by means of calcium-45, 4823.

Houck, J. C. Turbidimetric determination of

deoxyribonuclease activity, 240.

Houk, W. W., and Silverman, L. Determination of iron, chromium and nickel by X-ray fluorescence analysis. Aqueous solution method, 134.

House, H. P. See Rains, T. C., 5182. House, R. See Knight, J. D., 1447. Houte, E. Boelsma-van. See Boelsma-van Houte, E. Hoverath, A. See Radmacher, W., 553, 1091, 4372.

Howard, H. E., and Ferguson, W. C. Elimination of preliminary depentanisation of gasoline prior to hydrocarbon-type analysis by mass spectrometry, 614.

Howarth, S. R. Constant-head aspirator, 1596. Howe, R. W. See Oxley, T. A., 3979. Howell, F. G. Spectrochemical determination of acid-soluble aluminium in low-alloy steels by the rotating-disc method, 1361.

Howes, J. E., jun. See Brown, C. T., 4674. Howling, H. L., and Landolt, P. E. Determination of lithium in silicate minerals and leach solutions by flame photometry, 2619.

Howorka, K., and Hädicke, M. Titration of the picrates of organic nitrogenous bases in glacial acetic acid. I. Determination of some quaternary ammonium salts, 2954.

Höxter, G., Wajehenberg, B. L., Martirani, I., and Cintra, A. B. V. Determination of polysaccharide hexoses and hexosamines in normal human sera,

Hoyle, W., and West, T. S. Application of zone electrophoresis and polarography to the analysis of complexone mixtures, 1800.

Hoyme, H. See Bartels, U., 554, 1794, 3293.

Hozumi, K. Studies on organic micro-analyses. XVIII. Basic principles of the Clauson-Kaas micro-hydrogenation apparatus, 2751; XIX. Modified micro-hydrogenation apparatus and a rapid method of calculation, 2751; XXI. An improved method for determining alkoxyl groups by the use of porous silver granules and absorption tube, 2751.

Hrabetová, E., and Tupý, J. Quantitative determination of proline by paper chromatography,

4426

Hřivnáč, M., and Janák, J. Gas chromatography for analytical control of the production of crude naphthalene oil and its processing into pure naphthalene, 2809.

See also Janák, J., 5318.

Hrobar, A. M. See Evans, H. B., 4720. Hromádková, V. See Novák, M., 4493. Hryniewiecka, J., and Grapich, Z. Determination of diphenylamine as a stabiliser in trichloroethylene, 2803.

Hsien, C.-C. See Yu, C.-C., 4347. Hsü, J.-C. See Chou, Y.-Y., 4458. Hsu, Y.-S. See Cheng, L.-P., 174. Hu, N.-C. See Huang, M.-C., 1887.

Hu, N.-C. See Huang, M.-C., 1887. Huang, M.-C., Hu, N.-C., Loo, C.-W., Wang, T.-T., Wu, T.-F., Ling, L.-C., and Shong, Y.-H. Isolation and identification of toxic nitrogenous bases. I. Use of tungstosilicic acid in the isolation of alkaloids and analogous toxic compounds, 1887.

Hubbard, W. N. See Nuttall, R. L., 5512. Huber, F. E., jun. See Lathouse, J., 1740. Huber, H. See Kainz, G., 225, 2259, 3796, 4368. Huber, M. See Sahli, M., 3963.

Huber, W. Direct determination of oxygen in alkali and alkaline-earth salts of organic acids, 1403. Paper chromatography of olefins, 3799.

Hubik, M. See Jureček, M., 5270. Hübsch, H., and Nehring, K. Kjeldahl and Dumas methods for the determination of nitrogen, 4808. Hübschen, L. Determination of water by the

distillation method, 4116. Hudson, F. L., and Milner, W. D. Flat-headed glass

electrodes for measuring the pH of paper, 3371.

ndson. J. R. Evaluation of hops. VIII. Note Hudson, J. R. Evaluation of hops. VIII. Note on the preparation of extracts in the estimation of a-acids, 2983.

Hudy, J. A. Resin acids. Gas chromatography of

their methyl esters, 2850.

Hues, A. D. See Gardner, R. D., 1381.

Huff, E. Chromatography of mixtures of lactaldehyde, acetol [hydroxypropan-2-one] and pyruvaldehyde on bisulphite ion-exchange columns, 2279.

Huff, G. A. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part 2. Instrumentation, remote-control techniques and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Remote analytical facility opera-

tional experiences, 3103.

Huffman, E. H. See Jeung, E., 4261.

Huffman, E. W. D. See Staten, F. W., 3208.

Hughes, J. W. See Pike, E. R., 824. Hughes, M. A., White, D., and Roberts, A. L. Separation of the meta- and para-isomers of the xylenes, cresols and toluidines by gas - solid chromatography, 3329.

Hügli, F. See Bersier, P., 2185. Huguet, M. See Buzon, J., 1995.

Huizenga, J. R. See Bate, G. L., 3776, and Ehmann.

W. D., 1040. Huizinga, F. See Maurice, M. J., 5328. Hulanicki, A. See Kemula, W., 128, 356, 357, 360,

Humblet, L. See Tyou, P., 3758.

Hume, D. N. [Review of fundamental developments in analysis.] Polarographic theory, instrumentation and methodology, 5125.

and Paige, J. L. Automatic stopcock turner, 1195.

See also Foster, W. H., jun., 3573, 3574, Hum-melstedt, L. E. I., 3281, Miller, B., 4640, and Olver, J. W., 929.

Hummel, B. C. W. Spectrophotometric determination of chymotrypsin, trypsin and thrombin, 3459

Hummel, D. Analysis of terephthalic polyester wire-lacquers, 1837

Hummelstedt, L. E. I., and Hume, D. N. Photometric titration of weak bases in non-aqueous media. 3281.

Humoller, F. L. See Keenan, M. P., 662. Hunebelle, G. See Verly, W. G., 3129. Hunter, D. L., Petterson, L. L., and Steinberg, H. Determination of boron in boric acid esters. 3661.

Hunter, G. Micro-method for the determination of calcium and magnesium in general biological material, 3868.

Hunter, G. J., and Chenley, R. B. Determination of submicrogram quantities of plutonium-239, 500. Hunter, R. S. Reflectometer and its use for white-

ness measurement, 4087

Hurdue, N. See Papafil, M., 4124. Hurley, N. A. Atkin method for vitamin B₆ assay, 4503

Hurtubise, F. G., and Krässig, H. Classification of fine structural characteristics in cellulose by infra-red spectroscopy. Use of potassium bromide pellet technique, 4332.

Hurwitz, J. K. Slopes of working curves in emissionspectrometric analysis of certain silicates, 2663.

Hutner, S. H. See Baker, H., 1125. Hutson, D. H. See Bourne, E. J., 1787. Hutterer, F., and Singer, E. J. Method for hydroxy-proline determination, 4951.

Huyck, H. P. See Baggett, W. L., 1333. Hyman, A. J. See Wiarda, K. S., 5378.

Hynek, R. J. [Symposium on solvent extraction in the analysis of metals.] 8-Hydroxyquinaldine extraction applied to the analysis of metals, 4643.

Hynie, I., Večerek, B., and Wagner, J. Fluorimetric determination of acetone in urine, 4920.

Iachan, A., Roitman, R., and Perrone, J. C. Determination of proline and hydroxyproline, 672.

Iachi, I. See Kitamura, M., 1486. Iancu, C. See Armeanu, V., 544, 999, 5404. Iancu, C. See Armeanu, V., 5 Iancu, S. See Miss, A., 1164.

Ibrahim, R. K., and Towers, G. H. N. Chromatography of plant phenolic acids, 5359. Icha, F. Polarographic determination of 6-azauracil,

2952 and Valenta, M. Erio green, a new adsorption

indicator in argentimetry, 1648. Ichikawa, F., and Uruno, S. Separation of uranium and protactinium from thorium by amine extrac-

tion, 5235. Ichimura, S. See Sakai, S., 727, and Shimizu, M.,

Ichimura, Y. Fluorimetric analysis of drugs. VI. Analysis of cotarnine chloride, 4450.

Ida, K. Polarographic studies on sarcomycin, 3957.

Iddings, F. A. See Pickard, P. L., 1071. Idleman, J. A. See McKenna, T. A., jun., 566,

Ieki, T. See Mizukami, S., 4308.

Ieso, F. di. See Montagnani, A., 1864. Ievin'sh, A. F. See Bankovskii, Yu. A., 514, 3247, 3628, and Veis, A. R., 369

Igel, E. A. See Ungnade, H. E., 1626. Ignatova, L. A. See Kovalenko, P. N., 1291.

Iguchi, A., Yoshino, Y., and Kojima, M. Ultraviolet spectrophotometric determination of ethylenediaminetetra-acetic acid with copper sulphate, 586.

Iismaa, O. Micro-determination of sulphur in plant material, 1477.

Ikeda, N., and Ebihara, H. Carrier-free separation of lanthanum-140 from barium-140 by the

leaching-out method, 61.

— See also Hamaguchi, H., 1693. Ikeda, S. See Gotó, Hidehiro, 531, 3669. Ikenaka, T. See Jirgensons, B., 1869. Ikram, M. See Cacace, F., 2465.

Il'in, A. N. Determination of quartz in the presence of silicates by a kinetic method, 426.

Ilver, K., Berger, J., and Jackerott, A. Identification of drugs. VI. Nitration of acetarsol, 1907. Imada, M. R. See Werbin, H., 5339.

Imai, H. Studies on paper chromatography. II. Separation of lead, bismuth, cadmium, mercury11 and copper with developers consisting of aqueous solutions of inorganic compounds, 2614; III. Separation of arsenic, antimony and tin with an inorganic developer, 2614; IV. Separation of iron, aluminium and chromium with an inorganic developer, 2614.

Imai, I., Wakabayashi, T., Yoshino, M., Komiya, S., and Kotera, K. Determination of alkylketen dimers with ethylamine, 2265.

Imbert, G. See Boutet, J., 2628

Imperial Chemical Industries of Australia and New Zealand, Ltd. Apparatus for detecting the presence of organic gases and vapours, 4565.

Inaba, A. See Momose, T., 4919. Inagaki, M. See Hada, H., 713.

Inamori, Y. See Musha, S., 4186. Inam-ul-Haq. See Cacace, F., 4300, 5262.

Inarida, M. Separation of tellurium IV and selenium IV by solvent extraction with tributyl phosphate in kerosine, 475. Separation of tellurite ions from sulphate ions by solvent extraction with tributyl phosphate in kerosine, 476. Separation of tellurium from iodide with anion-exchange resin, 964. Carrier-free separation of iodine-131 from irradiated unit I-131, 993.

Inczédy, J. New applications of ion exchangers in chemical analysis, 2605.

Chemical analysis, 2009.

— See also Erdey, L., 14, 4783.

Indinger, J. See Quentin, K.-E., 2464.

Infante, R. See Caldarera, C. M., 2389.

Ingber, N. M. See Larsen, R. P., 117, 1718.

Ingles, J. C. See Zimmerman, J. B., 4180.

Inman, W. R. See Faye, G. H., 29.
Inoue, Yasushi. See Ishibashi, Masayoshi, 74, 99.
Inoue, Yoshiyuki. See Noto, T., 258.
Intonti, R., Cotta-Ramusino, F., and Stacchini, A.

Determination of orange juice in beverages, 745; 1925. Detection and determination of benzoic acid and methyl p-hydroxybenzoate in jams and non-alcoholic drinks by spectrophotometry, 5437.

- See also Cotta-Ramusino, F., 2031, and Lais, A., 2548.

Invernizzi, I. See Sampietro, C., 2978, 4483. Ioan, S. See Nicolaescu, V., 2704.

Ioffe, B. V., and Borisov, A. I. Refractometric determination of tert.-butyl alcohol in complex mixtures with water, secondary and primary alcohols, 5269.

Ioganson, A. V. See Tarasov, A. I., 1997.

Ionescu, M., Demetrescu, A., and Mitran, E. Application of ion-exchange resin to the Lunge method for the determination of sulphur in ores, 955.

Ipata, P. See Cerletti, P., 5397.Iritani, N., Tanaka, T., and Oishi, H. Determination of the sulphate ion with EDTA. II. Chelatometric determination of the sulphate ion as lead sulphate, 102.

Irving, G. Determination of indium by the radio-

activation method, 414.

Irving, H., Bell, R. P., and Ferguson, J. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Structure of dithizone and its metal complexes, 2031.

- and Mellor, D. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Steric hindrance in analytical chemistry,

2031.

and Pettit, L. D. Automatic titrimeter for plotting true-scale titration curves, 3028.

Smales, A. A., and Smit, J. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Determination of indium in rocks and minerals by radioactivation, 2031.

See also Reed, G. L., 296. Isaeva, K. G., and Zhuravlev, L. G. Determination of small amounts of germanium in ores and

minerals, 3183.

Isaksson, B. See Cramér, K., 4437.
Isebaert, L. See Hartong, B. D., 1927.
Ishibashi, Masayoshi, Fujinaga, T., and Izutsu, K. Organic reagents in the polarographic determination of uranium and zirconium, 1737. Studies in polarographic analysis. XXXIV. Determination of zirconium with Mordant blue 2R, 2130.

- Fujinaga, T., and Nagai, T. Studies in polarographic analysis. XXXIII. Determination of

calcium and magnesium, 2078.

Fujinaga, T., Saito, A., and Izutsu, K. Studies in polarographic analysis. XXXII. Chronopotentiometry with a dropping mercury electrode,

- Fujinaga, T., Saito, A., and Masuda, K. Chemical studies on radioactive indicators. XX. Separation of lanthanum from a barium - lanthanum transient equilibrium mixture with a mercury cathode, 2108.

- Fujinaga, T., and Sato, M. Application of tetraphenylarsonium chloride to the determina-

tion of tin in iron and steel, 1011.

and Hara, T. Determination of potassium in dilute solution and its application to the analysis of sea water, 1263. Systematic analysis of potassium, rubidium and caesium and its application to sea muds, 1264.

Shigematsu, T., and Nishikawa, Y. Fluorimetric analysis. IV. Fluorimetric determination of gallium with 8-hydroxyquinoline, 1305.

Shigematsu, T., and Shibata, Shozo. Analytical chemistry. I. Induced reaction on the mech-anism of the KMnO₄ - Fe^{II} - Cl⁻ system including the suppression with Zimmermann - Reinhardt reagent, 132. Manganimetry. II. Determination of a small amount of iron in the presence of arsenic, antimony and tin with manganic pyrophosphate, 1747; IV. Oxidimetric determination of oxalic, malonic, tartaric, citric and salicylic acids with manganic pyrophosphate, 1793.

Ishibashi, Masayoshi, Shigematsu, T., and Tabushi, M. Simultaneous spectrophotometric determination of uranium and iron with acetylacetone,

and Tabushi, M. Determination of phosphoric X. Spectrophotometric determination of a micro amount of phosphoric acid by solvent

extraction as molybdophosphate, 4216.

- Yamamoto, Toshio, and Hara, T. Method for separating rubidium and caesium from potassium,

Yamamoto, Yuroku, and Inoue, Yasushi. Ultraviolet spectrophotometric determination of tin1V asa chloro complex, 74. Ultra-violet spectrophotometric determination of sulphur dioxide in sulphuric acid, 99.

Yamamoto, Yuroku, and Yamada, H. Analytical chemistry by means of organic compounds. 1-Hydroxyacridine as a new reagent

(neo-oxine). (1), 3113.

Ishibashi, Michihiro, Nagai, T., Fujinaga, T., and Funasaka, W. Polarographic determination of traces of bismuth in pure silver by the use of a mixture of sodium citrate and EDTA as supporting electrolyte, 458.

Ishida, T., Noda, Y., and Okada, H. Properties of black chromium deposit and an analytical method

for urea in the electrolytic bath, 2779.

Ishidate, M., Takitani, S., and Nakajima, T. Determination of glucuronic acid. II. The separate determination of glucuronic acid and glucuronides by ion-exchange resin, 3413.

and Watanabe, M. Determination of glucuronic acid and glucuronides in biological fluids by ion-

exchange resin, 2371.

Ishii, E. See Murakami, T., 1830. Ishii, K., Hayashi, S., and Fujiwara, S. Apparatus for high-frequency analysis, 2022.

Ishii, M. See Narita, K., 3285.

Ishimori, T., and Nakamura, E. Distribution of

neptunium between tri-n-butyl phosphate and some mineral acids, 1741.

Isobe, S. Determination of amino acids. Effect of time of hydrolysis of protein on the determination of amino acids, 5368. III. hydrolysis time and effect of carbohydrate on tryptophan determination, 5368.

— See also Matsuno, N., 5368.

Isono, Z. See Ono, K., 2335.

Israel, Y. Polarographic determination of low

concentrations of mercuric ion, 1686.

and Vromen, A. Polarographic determination of low concentrations of silver in the presence of

interfering elements, 1670.

Issa, I. M., Allam, M. G. E., and Amer, M. M. A.
Oxidation with manganate solutions. II. Reduction of manganate with quadrivalent tellurium, 3742.

and Azim, A. A. A. Lead dioxide electrodes

in acid - base titrations, 1223.

and Hamdy, M. Oxidation of sulphides with alkaline potassium permanganate, 2184. Oxidation with potassium permanganate in the presence of fluoride. I. Direct titration of telluriumIV with potassium permanganate in acid medium in the presence of sodium fluoride, 3722; II. Determination of selenium^{IV}, 3719.

Hamdy, M., and El Hadidy, A. Volumetric determination of mercury! with alkaline per-

manganate, 906.

and Issa, R. M. Polarographic analysis. I. Polarography of copper, uranium and iron in alkaline solutions containing triethanolamine, Issa, I. M., Issa, R. M., and Hewaidy, I. F. Studies in polarography. IV. Reduction of manganate at the dropping-mercury electrode, 2721.

Khalifa, H., and Allam, M. G. E. Oxidation with manganate solutions. I. Reduction of

manganate with arsenic^{III}, 3742.

Issa, R. M. See Issa, I. M., 2721, 5140. Issartel, R. See Margotte-Boy, G., 3423.

Itano, M., Williams, L. A., and Zak, B. Spectrophotometric determination of chloride in urine,

Ito, A., and Amakasu, O. Determination of a mixture of thiolutin and aureothricin by infra-red spectrophotometry, 2935.

Ito, M. See Musha, S., 4186. Ito, R. See Yamasaki, Kenichiro, 920.

Itsuki, K., and Kaji, T. Determination of copper and lead in crude tin by alternating-current

polarography, 4192.

- and Suzuki, F. Alternating-current polaro-graphy of copper and zinc in a supporting electrolyte containing ammonium chloride and

- Suzuki, F., and Sato, F. Determination of lead in crude copper by alternating-current polarography, 930. Determination of nickel in crude copper by alternating-current polarography, 1766.

Iuchi, I., and Shibata, S. Examination of melituria. Separation and identification of urinary sugars by means of paper electrophoresis at high potential gradient, 3878.

Ivaldi, G., and Macri, I. Spectrophotometric determination of small quantities of esterified

fatty acids in human plasma, 2885.

Ivanova, E. A., Ivanova, N. M., Kolykhalova, S. I., Smirnova, N. M., Fleisher, G. D., and Chernysheva, A. M. Chemical analysis of high-alloyed and heat-resistant steel, 530.

Ivanova, L. P. See Filippova, K. I., 2624. Ivanova, M. G. Determination of nitric acid in sulphuric acid and mixtures, 944.

Ivanova, N. M. See Ivanova, E. A., 530. Ivanova, Z. I., and Kovalenko, P. N. Potentiometric determination of calcium and magnesium, 1280.

Ivanovna, I. I. See Moldavskii, B. L., 605. Ivanovskii, B. V., and Volodina, I. N. Determination of the mineral composition of carbonate rocks, 1034.

Ivarsson, G. See Franzon, O., 2334.

Ivashova, N. P. See Terent'ev, A. P., 3284. Iwachido, T., Miyata, H., and Toei, K. Synthetic and analytical studies on colour reagents. o-Halogeno-o'-hydroxyazo compounds, 3601.

Iwakuma, Y. See Komatsu, S., 2161. Iwama, F. See Maruta, S., 4325.

Iwamatsu, H. See Naka, K., 1676. Iwamoto, R. T. Derivative chronopotentiometry,

Iwasaki, I., Utsumi, S., Tomonari, A., and Morita, I. New colorimetric determinations by the use of thiocyanate. XVI. Determination of a small amount of iodide in the presence of chloride and bromide, 2221.

Utsumi, S., Tomonari, A., Morita, I., and Shiota, M. New colorimetric determinations by the use of thiocyanate. XV. Determination of a small amount of bromide in the presence of chloride and iodide, 2221.

See also Shiota, M., 2221.

Iwase, A. Reduction of lanthanum, praseodymium and neodymium at the dropping-mercury electrode, 4179. Determination of zirconium by the use of the polarogram of cadmium, 4206. Determination of the fluoride ion by the use of the polarogram of cadmium, 4257.

Iwata, I. High-frequency titration of halogens in food, 1170.

Iwayama, Y. Colorimetric determination of higher fatty acids, 3519.

See also Aoki, M., 3369.

Izhak, I. G., Kel'manzon, S. K., and Izotova, N. V.
Determination of total fat by a complexometric method and the excess alkalinity in diluted soap,

Izmailov, G. A. Spectrograph with photo-electric recording of the optical spectrum, 5098.

Izmailov, N. A. Non-aqueous solvents in acid - base titration, 3606.

— See also Bezugiyi, V. D., 5282. Izmanova, T. A. See Klyachko, Yu. A., 141. Izotova, N. V. See Izhak, I. G., 3368.

Izutsu, K. See Ishibashi, Masayoshi, 1737, 2130,

Jablonski, W. Z., and Johnson, E. A. Specific masking by acetylacetone in titrations with ethylenediaminetetra-acetic acid, 5135.

Jaboulay, B. E. Determination of tungsten and molybdenum in high-speed steel, 540. Determination of vanadium in ferrovanadium, 461.

Jacks, E. L. See Smith, L. M., 736.
Jackson, A. See Clabaugh, W. S., 455.
Jackson, F. See Rosenthal, I., 2291.

Jackson, N., and Short, J. F. Separation of neptunium and plutonium by ion exchange, 501.

Jackson, P. J. See Fielder, R. S., 4371.
 Jackson, W. A. Colorimetric determination of aluminium in acid solutions of phosphate rock,

Jackwerth, E., and Specker, H. Determination of bivalent mercury in the presence of chloride, bromide and heavy metals, 404. Determination of the solvation numbers of extracted inorganic compounds, 1251. Photometric determination of water in ketones, esters and ethers, 3311.

See also Specker, H., 350. Jacob, K. D. Fertilisers, 3536

Jacobs, M. See Kratz, P., 3052. Jacobs, R. M., Farrell, R. F., and Anater, T. F. Spectrochemical determination of aluminium and copper in zirconium and Zircaloy using d.c. arc excitation and a barium fluoride flux, 2140.

and Gordon, N. E. Spectrographic determination of tin, iron, chromium and nickel in Zircaloy-2 using high-voltage-spark point-to-plane excitation,

See also Burton, R., 2177, Farrell, R. F., 1702, 2137, Featheringham, J. A., 2173, 2174, 2179, 2204, and Frain, J. F., 2136, 2149.

Jacobs, S. Determination of nitrogen in organic compounds by the ninhydrin method, 5263.

Jacobs, W. D. Spectrophotometric determination of with NN'-bis-(3-dimethylaminopropyl)dithio-oxamide, 4794. Spectrophotometric study of NN'-bis-(3-dimethylaminopropyl)dithio-

oxamide as a reagent, 4796.

and Yoe, J. H. Simultaneous spectrophotometric determination of traces of cobalt, nickel and copper with dithio-oxamide, 150. Simultaneous spectrophotometric determination of trace amounts of cobalt, nickel and copper with NN'-bis-(3-dimethylaminopropyl)dithio-oxamide, Spectrophotometric determination of ruthenium with NN'-bis-(3-dimethylaminopropyl)dithio-oxamide, 1378.

 Jacobsen, W. R. See Davis, D. G., 4269.
 Jacobsohn, K. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Polarimetry of aspartic complexes, 2031.

Jacobson, E. F. Spectrophotometric determination

of molybdenum in uranium alloys, 108.

Jacobson, H. I., Gupta, G. N., Fernandex, C.,

Hennix, S., and Jensen, E. V. Determination of

tritium in biological material, 3859.

Jacobson, S. D. See Ressler, N., 1510.

Jacobson, W. C. See Wiseman, H. G., 4528. Jacobson, G. See Brancaccio, A., 2906, 2907, 2910, 3453, 3457, and D'Alessandro, B., 3455

Jacqué, L. See Dubois, P., 2031, and Ciger, A.,

Jacquez, J. A., Jeltsch, R., and Hood, M. Measure-

ment of ammonia in plasma and blood, 339!.

Jacquignon, P. See Buu-Hoi, N. P., 2031.

Jäger, H. See Barbier, M., 2410, and Krauss, M. T., 3879.

Jain, B. D., and Singhal, S. P. Identification of certain anions and cations in mixtures by means of the formation of coloured ring products on agar gel, 343. 2:5-Dihydroxy-p-benzoquinone as an analytical reagent for the gravimetric determination of thorium and zirconium, 5202.

See also Bhat, A. N., 4764, 5129

Jain, N. L., Krishnamurthy, G. V., and Lal, G. Determination of non-volatile organic acids in fresh unripe pickling mangoes and salted mango

slices by paper chromatography, 1176.

Jakobsen, R. J., and Smith, C. D. Analysis of benzene - mesitylene mixtures, 1802. Analysis of toluene - butylbenzene mixtures, 1803.

Jakovac, Z. See Grand-Clement, A., 3102.

Jakubec, I. See Melichar, B., 4466.

James, A. E. See Klein, S., 5411.

James, A. T. Determination of the degree of unsaturation of long-chain fatty acids by gas liquid chromatography, 2486.

James, G. S., and Stephen, M. J. Electrometric determination of dissolved oxygen in aqueous solution, 3715.

James, J. See Wilson, R. F., 2741.

James, J. A. [International Symposium on Micro-Birmingham, 1958.] Determination of trace elements in semi-conducting materials by using radiochemical and mass-spectrometric methods, 3102.

Jamieson, D. R. See Van Atta, R. E., 1067.

Jaminet, F. Planimetric and densitometric methods in quantitative paper chromatography. Application to the determination of alkaloids and amines of broom (Sarothamnus scoparius L.), 3950.

Janáček, J. See Šmrhová, A., 1368. Janáček, K. See Doležal, J., 3179, 4735. Janák, J. Methods for measuring the curves

obtained in gas chromatography, 5493.
- and Hřivnáč. M. π-Electron interaction for selective separation of some quinoline bases and aromatic and heterocyclic hydrocarbons from coal-tar distillates by gas - liquid chromatography,

and Komers, R. Separation and analysis of dihydric phenols by gas chromatography, 1433.

See also Chundela, B., 4909, Cvrkal, H., 1451, Hřivnáč, M., 2809, and Krejčí, M., 3623

Jančik, F., Činková, O., and Körbl, J. Bromatometric determination of some hydrazine derivatives, 2293.

Jandásek, J. Determination of moisture in brown coal and its low-temperature coke by highfrequency heating, 2832.

Jangg, G., and Burker, A. Adsorption of uranium from organic solutions by ion-exchange resins, 3723. Ochsenfeld, W., and Habashi, F. Uranium in

rocks and rock phosphates, 3227.

Jänicke, S. See Presting, W., 4392.

Janisch, H., and Klaushofer, H. Determination of vitamin B₁₂ in pharmaceutical vitamin prepara-tions with Escherichia coli, 3960.

Janko, A., and Zagórski, Z. X-ray diffraction methods of identification of crystalline phases in

chemical analysis, 12.

Janrovic, S. Dj. See Milićević, B. T., 3540. Jannela, P. Determination of magnesium in normal and pathological blood, 2357. Determination of plasma hbrinogen, 2404.

Janota, H. F. See Ayres, G. H., 3273.

Janoušek, I., and Studlar, K. Determination of one to five per cent. of boron in steel, 532. Complexometric titration (chelatometry). Selective determination of zinc in slightly acid medium with xylenol orange and methylthymol blue, 3151.

Janowski, A. See Kemula, W., 128. Jansen, H. E., Luykx, M. J. M. M., Hartong, B. D., Klopper, W. J., and Schnellen, C. G. T. P. Copper and iron determination in hops, 1928. Janssen, E. T. See Klein, P. D., 1523.

Janssen, E. T. See Klein, P. D., 1523.

Jára, V. See Gottfried, J., 2665.

Jarabin, Z. See Szarvas, P., 94.

Jarczewski, A. See Lewandowski, A., 5285.

Jardine, G. C. See Diggle, W. R., 5143.

Jarkowski, T. L. See Zak, B., 2400, 3915.

Jarnagin, L. P. See Murthy, G. K., 2458.

Jart, A. Separation of fatty-acid esters by gas

chromatography, 1937.

Jasim, F., Magee, R. J., and Wilson, C. L. Separation and identification of manganese, technetium, rhenium, ruthenium and molybdenum on the

ultra-micro scale, 4776.

Jasinski, R. J. See Fassel, V. A., 3123.

Jasinski, T. See Ellert, H., 255, 5399.

Jassinger, F. See Stankoviansky, S., 4675.

Jaudon, E. See Coulombeau, J., 4282, and Rosotte,

R., 1013.

Jaulmes, P., and Ney, —. Investigation of hybrid red wines by chromatography of the colouring matter, 5442.

Jayle, M. F., Judas, O., and Crépy, O. Determination of urinary pregnanediol, 3450.

See also Scholler, R., 4975, and Weinmann, S. H., 1149, 3452.

Jeanmaire, L., and Michon, G. Radioactive isotopes strontium-89 and strontium-90 in dried milk,

Jedrzejewski, W. Amperometry in kinetic methods of quantitative analysis. I. Catalytic determination of small amounts of molybdenum, 5227.

Jeffay, H., Olubajo, F. O., and Jewell, W. R. Determination of radioactive sulphur in biological materials, 4906.

Jefferies, J. P. See Shaw, W. H. C., 2031. Jeffery, P. G. Detection of tin in tungsten minerals,

- and Wilson, A. D. Precipitation of manganese in silicate-rock analysis, 2719.

Jeffery, W. S. See Ting, S. F., 3610.
Jeffreys, G. V. Continuous analysis by refractive-index measurement, 5113.

Jehenson, P., Buslin, E., and Vandall, C. Acidimetric determination of silicon precipitated as potassium fluorosilicate applied to the rapid determination of silicon in ordinary steel, stainless nickel - chrome steel, tungsten steel and cast iron, 1363.

Jehlička, V. See Horyna, J., 2811. Jehring, H. See Schwabe, K., 4377. Jelinek, A., and Hošala, J. Potentiometric determination of manganese in ferromanganese and other manganese-containing material, 4262.

Jellinek, M., Strength, D. R., and Thayer, S. A. Oxidation products of choline.

Of betaine aldehyde, 664.

Jellinghaus, W. See Koch, W., 5250. Jeltsch, R. See Jacquez, J. A., 3391. Jenden, D. J. See Cho, A. K., 5393.

Jenik, J., Jureček, M., and Pátek, V. Decomposition of organic substances with magnesium. VII. Micro-determination of iodine in organic compounds, 3794; VIII. Elementary carbon as a source of error in halogen determination in organic substances, 5261

See also Jureček, M., 3793.
 Jenkins, E. N. See Slee, L. J., 2213.

Jenkins, J. W., and Kellenbach, K. O. Identification of anionic surface-active agents by infra-red absorption of the barium salts, 195

Jenkins, R. H. See Borrowdale, J., 1007, and Shanahan, C. E. A., 4280.

Jennen, J. J. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Oxonol dyes as reagents for silver, 2031.

Jenness, R. See Kuramoto, S., 268. Jennings, V. J. Determination of copper and lead in indium arsenide, 3672.

Jennings, W. G. Separation of micromole mixtures of 2:4-dinitrophenylhydrazones, 574. Device to control channelling, voids and disruption of pressure-developed chromatographic columns,

Jensen, A. Quantitative determination of carotene by paper chromatography, 1851.

and Jensen, S. L. Quantitative paper chromatography of carotenoids, 2377.

Jensen, B. S. 1-(2-Thiazolylazo)-2-hydroxyaryl compounds as complexometric metal indicators, 5132

Jensen, E. V. See Jacobson, H. I., 3859.

Jensen, R. Amperometric micro-determination of selenium, 2707.

Jensen, R. G., and Gander, G. W. Recovery of added monoglycerides from milk, 1916.

and Morgan, M. E. Estimation of the monoglyceride content of milk, 264.

Jensen, S. L. See Jensen, A., 2377.

Jensen-Holm, J., Lausen, H. H., Milthers, K., and Meller, K. O. Determination of cholinesterase activity in blood and organs by automatic titration, 1154.

Jentzsch, D., and Bergmann, G. Criteria for the separating efficiency of stationary phases in gas

chromatography, 3047.

Jessen, G. E. See Branson, J. J., 3103.

Jessop, G. See Cambridge Instrument Co., Ltd.,

Jesus, J. M. de. See Santini, R., 639.

Jeung, E., and Huffman, E. H. Determination of iodine in thallium iodide precipitates,

Jewell, W. R. See Jeffay, H., 4906. Jimeno, S. A. See Arribas Jimeno, S.

Jirgensons, B. Optical rotatory dispersion of

crystallised enzyme proteins, 3442.

- Ikenaka, T., and Gorguraki, V. The chemistry and testing of Bence-Jones proteins, 1869.

Jirgl, V. Paper electrochromatography of amino acids of blood serum, 1861.

Jirka, M. Polarographic determination of gentisic acid in biological material, 654.

Jirkovský, R. Radiometric determination of the ash content of coal by means of the absorption of y-radiation, 4373.

Jiroušek, P. See Klumpar, J., 2026.
 Jirsa, M., and Jirsová, V. Spectrophotometric behaviour of azobilirubin and azotaurobilirubin,

Jirsová, V. See Jirsa, M., 4935. Joffe, R. A. Determination of glycoproteins in blood serum, 3917

Johns, C. K. Quality tests for milk and milk products, 2968.

Johnson, A. J., and Vejvoda, E. Spectrochemical determination of trace impurities in plutonium nitrate solutions, 2215.

Johnson, C. A., and Vickers, C. Flask combustion technique in pharmaceutical analysis: iodinecontaining substances, 3291.

Johnson, C. M. See Handley, R., 3395. Johnson, D. P., and Johnson, J. B. Chromatographic separation of C₁ to C₄ primary and C₂ to C₁₂ secondary monoamines as 3:5-dinitrobenzamides. 1424.

Johnson, E. A. See Jablonski, W. Z., 5135. Johnson, F. J. See Gehrke, C. W., 1963.

Johnson, F. L., jun., and Ayres, G. H. Apparatus for suction filtration under inert atmosphere, 2520.

Johnson, H. W., jun., and Stross, F. H. 1202. Johnson, J. B., and Fletcher, J. P. Determination of vinyl ethers and other unsaturated compounds. Modified mercuric acetate procedure, 1784.

See also Johnson, D. P., 1424. anson, J. D. See La Mont, B. D., 335. anson, J. F. See Porter, R. S., 2534. Johnson, J. D. Johnson, J. F.

Johnson, T. R. Determination of plasma and urine haemoglobin, 214.

Johnston, C. C. See Steyermark, A., 4809.

Johnston, F. B. See Evans, W. A., 800.

Johnston, G. W., Holtkamp, F., and Eve, J. R.

Spectrophotometric determination of the oxygen saturation of blood, 1476.

Johnstone, B. M., and Briner, G. P. Automatic recording densitometer for paper chromatography,

Johri, K. N. Potassium trithiocarbonate reagent as a substitute for hydrogen sulphide in inorganic qualitative analysis, 2593.

Joki, J. See Franc, J., 1394.

Jones, A. See Mansford, K. R. L., 3434.

Jones, A. C. See Dannenberg, H., 4892.

Jones, B. See Freegarde, M., 539, 578, 3258.

Jones, F. S., and Nerheim, A. G. Macro spinning-band distillation column, 3031.

Jones, G. B., and Watkinson, J. H. Spectrophotometric determination of vanadium in plant materials, 1475.

Jones, H. C. [Second Conference - Analytical Chemistry in Nuclear Reactor Technology. 2. Intrumentation, remote-control techniques and nucleonics. [Gatlinburg, Sept. 29 to Oct. 1, 1958.] Instrumentation for chemical analyses. A. Applications of semi-conductor devices to potentiometric and coulometric titrations, 3103. See also Kelley, M. T., 2016.

Jones, J. D. Tonometric method for the determination of dissolved oxygen and carbon dioxide in

small samples, 5340. Jones, J. K. N., Wall, R. A., and Pittet, A. O. Separation of sugars on ion-exchange resins, 2274.

Jones, J. T. See Challis, H. J. G., 1315, and Gidley.

J. A. F., 5164.

Jones, K. M. Chromatographic method for the estimation of nicotinuric acid and nicotinamide,

Jones, L. A., and Hancock, C. K. Improved melting-

point block, 5114.

Jones. N. R. Estimation of anserinase activity by a low-temperature ninhydrin reaction, 242. Separation and determination of free purines, pyrimidines and nucleoside in cod muscle, 4435.

Jones, R. A. Determination of manganese in gasoline by X-ray emission spectrography, 1443.

Jones, R. N., and MacKenzie, M. A. Determination of deuterium in organic compounds by infra-red

spectrophotometry, 4299.
- See also Angell, C. L., 3818.

Jones, R. W. Applications of X-ray fluorescence spectrography to the determination of uranium and thorium, 982. Determination of impurities in uranium by X-ray fluorescence spectrometry,

- and Ashley, R. W. X-ray fluorescence analysis of stainless steel in aqueous solutions, 2229.

See also Ashley, R. W., 2134.
 Jones, S. L. Analysis of silver solders by anion exchange and EDTA titration, 3637.

Jones, S. W. See Wilkie, J. B., 1581. Jones, T. C. See Miner, F. J., 4689. Jones, T. S. G. [International Symposium on Microchemistry. Birmingham, 1958.] Chromatography of the larger molecules, 3102.

Jones, W. F. Qualitative inorganic analysis. IX. Detection of aluminium ion, 50; XII. Comparison of the methods used in the group separation of

strontium and calcium ions, 41.

Jones, W. H. See Gamble, L. W., 4259.

Jong, H. G. Bungenberg de, and Hoogeveen, J. T. Slit-feeding apparatus for paper chromatography with some examples concerning phosphatides,

and Someren, G. R. van. Acid fuchsine and uranyl nitrate in staining chromatograms of phosphatides, 217.

See also Hooghwinkel, G. J. M., 1498.

Jong, K. de. See Begemann, P. H., 295. Jordan, J., Meier, J., Billingham, E. J., jun., and Pendergrast, J. Thermometric titration in fused salts, 1629.

Jordan, K., and Fischer, W. R. Determination and removal of small traces of water in acetone, 1069. and **Picard**, **K**. Spectrochemical determination of niobium and titanium in industrial tantalic acid, 4745.

Jordanov, N., and Daiev, C. Photometric determination of cerium with o-tolidine, 60.

Jorysch. D. Chromatographic evaluation of vanilla

extracts, 1921.

Jouan, P. See Cormier, M., 2886.

Jourda, J. See Vélut, M., 1610.

Joursda, J. See Volut, M., 1610.

Joussot-Dubien, J., and Oster, G. Photochemical determination of metal cations by means of ethylenediaminetetra-acetic acid, 4650.

Jovtscheff, A. Determination of the iodine number of fats and oils by means of N-bromosuccinimide. Mono-unsaturated fatty acids, 4007.

Jud, L. See Rosenthal, H. L., 2365.

Judas, O. See Jayle, M. F., 3450.

Judd, W. C. See Dutina, D., 3103.

Juliard, A. L. Alternating-current cyclic voltammetry, 3587.

Jungreis, E. Spot test for formaldehyde and form-

aldehyde-liberating compounds, 4824.
- and **Gedalia, I.** Ultra-micro determination of iodine in drinking water on the basis of Feigl's

catalytic reaction, 4026.

— See also Feigl, F., 3331, 3332.

Junie, V. See Popper, E., 3634.

Jura, J. See Hanna, J. G., 2763.

Jureček, M., Churaček, J., and Červinka, V. Paperchromatographic separation and identification of the C1 to C6 fatty acids as the 2:4-dinitrobenzyl esters 3806.

- Hubík, M., and Večeřa, M. Identification of organic compounds. XXXIV. Identification of

aliphatic ethers, 5270.

and Jenik, J. Micro-detection and microdetermination of some elements in organic compounds by means of decomposition with magnesium, 3793.

and Kozák, P. Characterisation of the carboxylic acids used in the fat and soap industries by

oxidation with chromic acid. 277

See also Jenik, J., 3794, 5261, Petránek, J., 3321, and Večeřa, M., 5286.
 Jurinak, J. J., Brown, A. L., and Martin, P. E.

Extraction and determination of ethylene dibromide in soils, 5049. Jury, R. V., Webb, M. S. W., and Webb, R. J.

Spectrochemical determination of total strontium in bone, milk and vegetation, 4398.

Juvet, R. S., and Chiu, J. Determination of carbon in organic substances by an oxygen-flask method, 3780

and Wachi, F. M. Gas-chromatographic separation of metal halides by inorganic fused-salt substrates, 4199.

Juvet, R. S., jun., Twickler, M. C., and Afremow, L. C. Determination of organic nitro, nitroso and azo compounds with copper, 3820.

K

Kabanova, O. L., Danuschenkova, M. A., and Palei, P. N. Reactions of plutonium ions with ethylenediaminetetra-acetic acid, 3733.

Kabasakalian, P., and Basch, A. Paper chromatography of steroids. A systematic approach using

a generalised R_M function, 4971.

and McGlotten, J. Polarographic reduction of non-conjugated steroidal ketones, 693.

Kabrt, L., and Marek, Z. Determination of zir-conium, boron and carbon in zirconium diboride, 5195.

Kaczmarek, F. Photometric micro-determination of lobeline, 4451.

Kadota, S. See Takayama, Y., 623. Kahan, A. Contrast staining and quantitative determination of mucopolysaccharides on filterpaper by means of colloidal iron, 5277.

Kahane, E., and Kahane, M. Assay of reserpine, 703.

Kahane, M. See Kahane, E., 703. Kahle, G. R. See Caly, E. R., 2717. Kaier, R. J. See Lohr, L. J., 4584. Kain, S. See Andreev, A. S., 3632.

Kainz, G. Individual combustion of organic com-

pounds by means of an automatic regulator, 319. Micro-determination of glycol ethers, 4329.

and Hainberger, L. Absorption of carbon dioxide by soda asbestos and soda lime, 2516. Automation of the Pregl nitrogen determination, 2254. Tube packings in the determination of nitrogen, 2748. and Huber, H. Anomalous reactions in the

amino-nitrogen determination. Reaction of the —NH·CO— group with nitrous acid, 225; V. Anomaly of phenols, 2259; VI. The anomaly of indole and its derivatives, 2259; VII. The anomaly of the sulphonic acid amides, 3796; IX. The reaction of pyrroline and oxazoline compounds with nitrous acid, 4368.

Kainz, G., and Kasler, F. Gas-chromatographic investigation of the nitrometer gas evolved during the determination of nitrogen by the Dumas method, 1773. Anomalous reactions in the amino-nitrogen determination. VIII. Some anomalous amino acids, 3903.

Kasler, F., and Huber, H. Anomalous reactions in the amino-nitrogen determination. III. Anomaly of compounds with active methylene groups, 2259; IV. Anomalous reaction of glycine in the amino-nitrogen determination of van

Slyke, 2259.

Kainzner, A., and Neudorfer, F. Reductimetric method for the determination of manganese, 513. Kaiser, D. G., and Christian, J. E. Activation analysis of certain arsenic- and antimony-containing pharmaceuticals and the effect of beta-

emitting isotopes, 3488.

and Meinke, W. W. Activation analysis of trace cobalt in tissue using 10.5-minute cobalt-

60m, 2363.

Kaiser, H. See Acker, L., 1854.

Kaistha, K. K. Gravimetric estimation of vanillin via its semicarbazone, 1566.

Kaji, T. See Itsuki, K., 4192

Kajiwara, M. See Koga, Y., 2323. Kajiyama, R. See Kawahara, M., 145.

Kakáč, B. Photometric determination of prednisone

in admixture with cortisone, 2440.

— See also Vejdělek, Z. J., 2930. Kakemi, K., Arita, T., and Ohashi, S. Determination of antibiotics. VIII. Colorimetric determination of viomycin, 3476.

- Uno, T., and Yamashina, H. Colorimetric determination of azacyclonol, 3485.

Kakihana, H. See Kato, K., 412, 445.

Kakita, Y. See Gotô, Hidehiro, 4109. Kakuta, M. See Okamoto, J., 3648. Kaláb, M. Colorimetric determination of the cupric salt of pectic acid, 5023. Identification of kynurenine and xanthurenic acid in urine, 5376.

Kalinowska, Z. See Shergina, N. I., 2306, 2795.

Kalinowska, Z. Coulometric micro-determination of thymol in the substance, also in Thymus vulgaris L. and its oil, 4875.

Kalinowski, K. Coulometric micro-determination of Bromural [bromvaletone] (a-bromisovalerylurea) and carbromal (α-bromodiethylacetylurea), 253.

and Baran, H. Coulometric determination of cyclobarbitone and hexobarbitone, 254.

and Sykulska, Z. Micro-determination of folic acid by coulometric and titrimetric methods using chloramine T, 762.

and Wardecka, I. Refractometric determination

of Cardiazol [leptazol] in pharmaceutical pre-

parations, 1166.

and Zwierzchowski, Z. Micro-determination of Novocain [procaine] and p-aminobenzoic acid by a coulometric method after their separation by electrophoresis, 721. Coulometric determination of Dionin (ethylmorphine hydrochloride) and codeine phosphate, 2920.

Kälke, E. Colorimetric determination of nitro-

cellulose, 2864.

Källe, K. T. Determination of the quantity of liquid-soluble gas in a gas mixture, 4550.

Kallina, D. See Kuffner, F., 5268.

Kallistratos, G., Pfau, A., and Ossowski, B. Colour reactions and paper-chromatographic studies of yttrium and zirconium, 4177.

Kallmann, S., Oberthin, H., and Liu, R. Determination of cadmium in zinc concentrates and other zinc-rich materials, 3651.

Kálmán, L., and Újhidy, A. Determination of the acidic constituents of coal utilisation products by titration in non-aqueous medium, 1445.

Kalmykov, L. Z. See Gershuns, A. L., 4132. Polarographic determination of mucoprotein MP-1 after the separation of the serum by

paper electrophoresis, 4962.

Kalugin, A. A. See Perepletchikova, E. M., 4328. Kalvoda, R. Sensitivity of the polarographic method, 2019. [International Symposium on Microchemistry. Birmingham, 1958.] Polarographic micro-analysis by an oscillographic method, 3102.

See also Rottová-Kloubková, O., 5349. Kamada, M., and Onishi, T. New colorimetric determination of fluoride ions with the zirconium complex of 4-dimethylaminoazobenzene-4-arsonic

Kamaev, G. A. See Rozanova, L. N., 3202. Kamal, T. H. Complexometric titration of calcium and magnesium in the presence of phosphate in

milk and blood plasma, 5019.

Kambara, T. See Takemori, Y., 842.

Kamijo, K. See Furusawa, M., 2818.

Kamiya, S. Colour reaction of mercapto groups with 2:6-dibromo-p-benzoquinonechlorimine, 4318.

Kammori, O., and Amano, A. Analysis of highchromium slag by acid decomposition method,

Kamp, W. Ion-exchange method for the determination of antipyrin [phenazone] and caffeine in the presence of phenacetin, 2435

Kampen, E. J. van. See Heerspink, W., 2581. Kamzolkin, V. V. See Bashkirov, A. N., 1410.

Kanaev, N. A. See Busev, A. I., 4170. Kanazawa, J., and Sato, R. Separation and identification of organic mercury compounds by paper chromatography, 1971. Determination of mercury in organic fungicides by the dithizone method, 4037.

Kane, P. F., Cohen, C. J., Betker, W. R., and MacDougall, D. Assay of Co-Ral [O-3-chloro-4methyl-2-oxo-2H-1-benzopyran-7-yl OO-diethyl phosphorothioate] in technical materials and

formulated products, 4534.

- and Gillespie, K. H. Determination of Dyrene and cyanuric chloride in technical materials,

4535

Kane, P. O. Direct determination of drug concentrations in biological fluids by polarography, 642.

Polarography of amidines, 4337.

Kang, C.-C. C., Keel, E. W., and Solomon, E.
Determination of traces of vanadium, iron and nickel in petroleum oils by X-ray emission spectrography, 4370.

Kannan, L. V., Bose, P. C., and Ray, G. K. Estimation of resin in Ipomoea hederacea (Linn.)

Jacq., 3961.

Srivastava, S. K., and Ray, G. K. Estimation of vasicine in Adhatoda vasica Nees, 247.

Kanno, S. Colorimetric determination of sulphate ions by means of barium molybdate and thio-glycollic acid, 469. Colorimetric determination of sulphur oxides in the atmosphere, 769.

Kanno, T. Spectrophotometric studies on organometallic complexes used in analytical chemistry. V. The reaction of organic reagents with ger-manium, 2120; VI. Determination of uranium with quercetin-6-sulphonic acid, 4246.

Kantro, D. L. See Copeland, L. E., 1769. Kanzaki, G., and Berger, E. Y. Colorimetric determination of methylcellulose with diphenylamine, 1455.

Kanzelmeyer, J. H. See Van Aman, R. E., 2691. Kaplan, B. Ya. Tervalent iron in pulse polarography, 2018. Pulse-polarographic determination of lead, zinc, copper, thallium and indium in mineral raw materials, 3617.

Kapoor, U., and Nigam, H. L. Adsorption indicators. Fluorescein dyes in argentimetric titrations,

5130; II. Succinylfluorescein dyes in argentimetric titrations, 5130.

Karabash, A. G., Peizulaev, Sh. I., Slyusareva, R. L., and Meshkova, V. M. Chemico-spectrographic analysis of high-purity aluminium, 2641.

Karanov, R. A., and Karolev, A. N. Photometric determination of bismuth in refined lead, 3692. See also Budevskii, O. B., 3152, and Karolev, A. N., 39.

Karasek, F. W. See Claudy, H. N., 1217. Karchmer, J. H. Gas-liquid partition chromatography of sulphur compounds with \$\beta'-iminodipropionitrile, 1427.

Karinskaya, F. G. See Suvorova, O. A., 1348. Karmanova, M. I. Gelatin in the determination of

silicon in complex steels, 3751.

Karmen, A., and Tritch, H. R. Radioassay by gas chromatography of compounds labelled with carbon-14, 5496.

See also Eden, M., 818.

Karnishin, A. A. See Korenman, I. M., 1017. Karolev, A. N., and Karanov, R. A. Determination of calcium oxide and silica in lead melting slags, 39.

and Koichev, M. K. Complexometric determination of lead by means of the indicators xylenol orange and methylthymol blue, 928.

See also Budevskii, O. B., 3152, and Karanov, R. A., 3692.

Karp, S. See Baumgarten, S., 20. Karpov, E. F. See Kravchenko, V. S., 3297.

Karr, C., jun., Estep, P. A., and Hirst, L. L., jun. Countercurrent distribution of high-boiling phenol from a low-temperature coal tar, 4867.

— See also Chang, T.-C. L., 3364.

Karrman, K. J., Bladh, E., and Gedda, P.-O.
Potentiometric micro-titration of potassium, 874. Turbidimetric ultra-micro titration of potassium, 875.

Karten, B. S., and Ma, T. S. Determination of the isocyanate and isothiocyanate groups. Microand semi-micro methods, 3296.

Kartnig, T. Chemical determination of the active principles of senna, 2932.

Kartseva, V. D., and Bruns, B. P. Physico-chemical methods for the determination of antibiotics. IX. Photometric determination of polymyxin, 2936.

Karvánek, M. See Pokorný, J., 1825. Karýmova, A. I. See Zhukhovitskií, A. A., 3354. Kaše, M., and Mandl, M. Determination of oxygen, hydrogen and nitrogen in steel by the vacuum

fusion method, 4788.

— See also Mandl, M., 1756.

Kashikawa, K. See Hisada, M., 1680.

Kashyap, G. P. See Singh, B., 855.

Kasler, F. See Kainz, G., 1773, 2259, 3903.

Kassenaar, A. A. H. See Wiarda, K. S., 5378.

Kataoka, H. See Ögiya, S., 3414. Katayama, N. See Öda, N., 435. Kates, M. See McInnes, A. G., 4009.

Kato, K., and Kakihana, H. Micro-detection of gallium with Alizarin red S in the presence of anion-exchange resin, 412. Microchemical detection of thorium with Alizarin red S in the presence of anion-exchange resin, 445.

Kato, S. See Kuroda, K., 2417.

Kato, Takeshi. Colorimetric determination of traces of sulphite ions, 4230.

and Shinra, K. Chemical analysis with an ultra-violet filter photometer. IV. Determination of ming te amounts of sulphide ions in water. 2495

Kato, Takio. See Takei, S., 4151. Kato, Toyoaki. See Suzuki, N., 4142.

Katsube, Y., and Yoe, J. H. Spectrophotometric determination of nitrous acid with disodium 7-amino-8- (4-amino-2-sulphophenylazo) - 1 - naphthol-3-sulphonate, 4215.

Katyal, J. M., and Gorin, G. Determination of

mercapto groups in ovalbumin with ferricyanide,

231.

Katz, A. M., Dreyer, W. J., and Anfinsen, C. B. Peptide separation by two-dimensional chromatography and electrophoresis, 3436. Katz, M. See Barilari, E. M., 710.

Katz, S., and Heukelekian, H. Chlorine determina-tions in waste waters. I. Evaluation of the cyanogen chloride method, 2493.

Kauffman, F. L. See Hansen, P. V., 1565. Kauffman, G. F., and Tabor, C. D. Precision massspectrometric determination of uranium isotopic composition, 3231.

 Kaufman, H. R. See Zlatkis, A., 3559.
 Kaufmann, H. P., and Aparicio, M. Paper chromatography in the analysis of fats and oils.
 XXXV. The detection of fatty impurities in olive oil. 2481.

and Kirschnek, H. Paper chromatography in the analysis of fats and oils. XXXIV. The the analysis of fats and oils. XXXIV. The detection of fatty aldehydes. 5. Qualitative and quantitative paper-chromatographic analysis of

dualitative pages (1988) fatty aldebydes, 2480.

and Makus, Z. Paper chromatography in the analysis of fats and oils. XXXI. The separation analysis righterides. of mixtures of synthetic and natural triglycerides, 2479; XL. Analysis of mixtures of fatty acids,

5035

and Schnurbusch, H. Paper chromatography in the analysis of fats and oils. XXX. Analysis of glycerides, 1936.

Schnurbush, H., and Shoeb, Z. E. chromatography in the analysis of fats and oils. XXXIX. Quantitative analysis of fatty-acid mixtures containing palmitoleic acid, 4013.

Volbert, F., and Mankel, G. Infra-red spectrography in the analysis of fats and oils. I. Literature, 1935; II. Quantitative determination of trans-unsaturated fatty acids in the presence of cis-isomers and saturated compounds, 2483.

— and Walther, G. Paper chromatography in the analysis of fats and oils. XXXVI. Paper-chromatographic detection of surface-active substances by the "transparence" method, 2482. Kaufmann, S., Medina, J. C., and Zapata, C. Analytical assay of diosgenin, 4417.

Kaul, P. N., Brochmann-Hanssen, E., and Way, E. L.

Quantitative determination of apomorphine, 3464.

Kaup, R. R. See Steyermark, A., 3288. Kavanagh, J. M., and Beamish, F. E. Fire assay for osmium and ruthenium, 4797.

Kavarana, H. H. Assay of di-iodohydroxyquin 8-hydroxy-5: 7-di-iodoquinoline] by non-aqueous

Kawaguchi, H. See Nakajima, Tokunosuke, 493.
Kawaguchi, M. See Koga, Y., 2323.
Kawahara, M., Mochizuki, H., and Kajiyama, R.,
Polarographic, analysis of iron and steel. I

Polarographic analysis of iron and steel. Determination of molybdenum, tungsten, titanium and niobium in phosphoric acid, 145.

Kawasaki, K. See Hamaguchi, H., 5347. Kawase, A. See Hamaguein, H., 9347. Kawase, A. See Yanagihara, Tadashi, 46, 4195. Kawashima, T. See Hamaguehi, H., 1693. Kay, W. W., and Murfitt, K. C. Determination of

blood glutathione, 3910.

Kaye, W. High-resolution infra-red ammonia spectrum, 313.

Kayler, R. See Fijolka, P., 1459. Kayser, A. See Markus, L., 4390. Kayser, A.

Kayser, A. See Markus, L., 4390. Kazakova, E. B. See Zhigach, A. F., 3155. Kazanskaya, N. F. See Berezin, I. V., 1083. Kazanskii, B. A. See Zhukhovitskii, A. A., 3354. Kaznadzei, O. N. See Panchenkov, G. M., 3131. Kean, E. L., and Charalampous, F. C. Quantitative

estimation of myo-inositol, 4925.

Kearns, C. W. See Lipke, H., 1881. Kearns, G. L., Maranowski, N. C., and Crable, G. F. Analysis of petroleum products in the C12 to C20 Application of fluorescent indicator adsorption separatory and low-voltage massspectrometric techniques, 2322.

Keattch, C. J. Spectrophotometric determination of copper with ammonium pyrophosphate, 4128.

Kedrinskii, I. A. See Zhitkov, R. D., 861.

Keel, E. W. See Kang, C.-C. C., 4370. Keeler, R. F. Colour reactions for certain amino acids, amines and proteins, 1501.

Keeler, R. N. See Purcell, J. R., 5116. Keen, R. T. See Baxter, R. A., 1429. Keenan, M. P., Kleitsch, W. P., and Humoller, F. L. Determination of catecholamines in blood, 662

Keenan, R. W., and Marks, B. H. Method for the separation of plasmals, 4931.

Keeney, M., and Bassette, R. Detection of inter-mediate compounds in the early stages of the browning reaction in milk products, 1917.

See also Corbin, E. A., 5278. Keidel, F. A. Determination of water by direct

amperometric measurement, 3130.

Keily, H. J., Eldridge, A., and Hibbits, J. O. Composition of ferrous ammonium sulphate hexahydrate as a solid standard reductant, 1245. Assay of chromium metal and chromium^{III} oxide, 1725.

Keim, N. See Sterescu, M., 2437.
Keirs, R. J., Britt, R. D., jun., and Wentworth,
W. E. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Phosphorimetry: a new method of analysis,

Kelker, H. Gas-chromatographic determination of inert gas components in refrigerants, 570.

Kellenbach, K. O. See Jenkins, J. W., 195. Keller, R. A., and Giddings, J. C. Multiple zones and

spots in chromatography, 5078.

— See also Giddings, J. C., 3555. Kelley, M. T., Fisher, D. J., and Wagner, E. B.

Automatic recording velocity-servo potentiometric titrator, 4611.

- Jones, H. C., and Fisher, D. J. Controlled-potential and derivative polarograph, 2016. See also Feldman, C., 3103, and Maddox, W. L.,

Kelly, J. E. [Second Conference-Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of Gatlinburg, Sept. 29 to chemical analysis. Oct. 1, 1958.] Colorimetric determination of boron: a study of the variables involved in the quinalizarin method, 335.

Kelly, J. M. See Ferrari, A., 2431.
Kel'man, F. N. Determination of selenium in pyrites, residues, elementary sulphur and slimes from sulphate production, 963.

Kel'manzon, S. K. See Izhak, I. G., 3368.

Keltakallio, A. See Harva, O., 1613. Kemka, R., and Klučík, J. Determination of antimony and arsenic in the presence of each other,

Kemula, W. [International Symposium on Micro-chemistry. Birmingham, 1958.] Determination of minute amounts of some inorganic ions by using the hanging-mercury-drop electrode, 3102. Separation and determination of traces of organic substances by chromatopolarography, 3102.

Brachaczek, W., Dancewicz, D., and Hulanicki, A. Determination of lithium, sodium, potassium and calcium in Perhydrol by flame spectro-

graphy, 356.

Brachaczek, W., and Hulanicki, A. Absorptiometric determination of traces of cadmium in Perhydrol and hydrofluoric acid, 357. Determination of platinum in Perhydrol and ammonium fluoride by extraction titration, 550. Determination of mercury in brine and caustic soda by extractive titration with dithizone, 5167.

Brachaczek, W., and Kornacki, J. Nephelometric determination of sulphates in Perhydrol,

Brajter, K., Cieślik, S., and Lipińska-Kostrowicka, H. Determination of copper in metallic silver and silver nitrate, 4129. Application of ion exchangers to silver determination in lowcopper ores, 5154. Determination of small amounts of iron, manganese and copper in nickel, 5255

Brzozowski, S., and Butkiewicz, K. Chromatographic investigations. XII. Application of differential polarography to the determination of the concentration of the eluate flowing from

chromatographic columns, 297.

and Hulanicki, A. Determination of lithium in ammonium fluoride and in hydrofluoric acid.

Hulanicki, A., and Janowski, A. Colorimetric determination of traces of chlorides, 128.

and Kornacki, J. Polarographic determination of lead in Perhydrol, hydrofluoric acid and ammonium fluoride, 433. Polarographic determination of sulphates in Perhydrol, 470.

and Kublik, Z. Stationary "hanging" mercurydrop electrode in analytical chemistry, 322.

- Kublik, Z., and Galus, Z. Influence of gold in a

mercury electrode on electrode processes, 3088.

Kublik, Z., and Głodowski, S. "Hanging" mercury-drop electrode. Determination of

impurities in high-purity zinc, 1683.

- Rakowska, E., and Kublik, Z. "Hanging" mercury-drop electrode. IV. Analysis of traces

of impurities in uranium salts, 4255.

and Rubel, S. Polarographic determination of lead and iron in Perhydrol, and copper, lead and iron in hydrofluoric acid and ammonium fluoride.

and Sybilska, D. Clathrate compounds in

chromatography, 4048.

- and Wolfram, W. Determination of traces of phosphorus and silica in Perhydrol and of silica in ammonium fluoride, 1259.

Kendall, L. F. See Bierlein, T. K., 2214. Kendall, R. See Cawley, L. P., 2876. Kendall, R. P., and Marshall, H. S. B. Ester forma-

tion in acid - alcohol mixtures: effect of RF values in paper chromatography, 3041.

Kennedy, J., and Wheeler, V. J. Separation of beryllium from polyvalent cations with a diallyl phosphate complexing resin, 390.

Kennedy, J. H. Determination of uranium VI by reduction to uranium^{III} in a Jones reductor, 4244. Kennedy, J. V., Fries, R. J., Sullivan, L. J., and Willingham, C. B. Ebullioscopic molecularweight methods, 3082.

Kennedy, W. R., and Smith, R. N. Process for simultaneously sampling metals for spectrographic and chemical analysis, 3563.

Kenney, R. L., Singleton, T. C., and Fisher, G. S. Quantitative determination of a-pinene, 2314.

Kenttämaa, E. See Hirsjärvi, V. P., 3236. Kenttämaa, J., and Heinonen, E. Theory of titration of bases in glacial acetic acid, 2047.

Kenyon, D. See Williams, A. F., 3855. Keppie, A. T. See Mapstone, G. E., 3366. Keppler, H. H. See Casapieri, P., 1595. Kerlev, L. F. Quantitative determination of free

lysine in urine by two-dimensional paper chromatography, 226. Kern, D. M. Linear polarographic voltages at high

cell-currents, 3087

Kerny, P., Billon, J.-P., and Bigeard, F. Determination of some pharmaceutical products in non-aqueous medium, 1897.

Kersey, R. C. Determination of oleandomycin in animal feeds, 5481.

Kerssen, M. C., and Riepma, P. Determination of residues of zineb, 2507

Kertes, A. S., and Beck, A. Metal nitrates in paper chromatography. VI. Systems containing trin-butyl phosphate and nitric acid, 4112.

Kesser, G. See Larsen, R. P., 5197. Kessler, K. G. See Bass, A. M., 3562. Ketelaar, J. A. A. See Heslop, W. R., 5242. Keulemans, A. I. M. Gas chromatography, 3043. **Keyworth, D. A.** Metal complexes of NNN'N'-tetrakis-(2-hydroxypropyl)ethylenediamine, 2049.

Khadeev, V. A. See Zhdanov, A. K., 1020, 2068. Khakimova, V. See Maksimÿcheva, Z. T., 2216. Khalifa, H., Hamdy, M., and Soliman, A. Backtitration with mercuric nitrate in alkaline medium. Estimation of small amounts of lan-

thanum and analysis of its binary mixtures with

some other metals, 3172.

- and Soliman, A. Back-titration with mercuric nitrate in alkaline medium. Determination of small amounts of bismuth and analysis of its binary mixtures with some other metals, 2167

- See also Amin, A.-A.M., 4094, and Issa, I. M.,

See Mokhov, L. A., 83. Khalturin, V. S. Khamatova, A. T. See Shafershtein, I. Ya., 452. Khan, R. A. See Ansari, S., 4455 Khasina, T. V. See Azarova, L. G., 2646.

Khazanov, P. S. See Tumanov, A. A., 879. Khitrov, V. G. See Rusanov, A. K., 2622. Khlÿstova, A. D. See Tarasevich, N. I., 2205. Khlÿstova, A. P. See Zabrodina, A. S., 4317.

Khopkar, S. M., and De, A. K. Rapid extraction of copper with 2-thenoyltrifluoroacetone. of copperII Direct colorimetric determination in the organic phase, 3135. Cation-exchange behaviour of uranium^{VI} on Amberlite IR-120: separation from mixtures, 4251. Extraction and spectrophotometric determination of cerium with 2-thenoyltrifluoroacetone, 4693. Extraction of ironIII with 2-thenovltrifluoroacetone. Direct colorimetric determination in the organic phase, 4779.

Khorasani, S. S. M. A., and Khundkar, M. H.
Solvent extraction of antimony with ethyl
acetate, 1331. Separation of antimony from iron^{III}, copper^{II}, cobalt^{II} and cadmium^{II} by ion exchange, 3204.

Khristoforov, B. S. Determination of lead ferrite in slags from lead fusion, 933.

Khristoforov, B. S., and Artemenko, A. R. Influence of metallic lead on the determination of metallic zinc, 903.

Brazhnikova, M. V., and Poltaeva, A. N. Rational analysis of lead products containing elementary

sulphur, 932.

Khundkar, M. H. See Khorasani, S. S. M. A., 1331, 3204.

Kiba, T., Akaza, I., and Hachino, H. Colorimetric determination of selenium by the tin11 - strong phosphoric acid reduction method, 1338.

Akaza, I., and Kinoshita, O. determination of mercury by Colorimetric tin II - strong phosphoric acid reduction method, 4686.

Kibrick, A. C., and Skupp, S. J. Chromatographic separation of fatty acids based on chlorophenacyl esters, 3520.

Kidder, G. W. See Heinrich, M. R., 764. Kies, H. L. Potentiometric titrations, 4600.

and Buyk, J. J. Coulometric estimation of periodate, 3243.

Kieser, M. E., and Sissons, D. J. Formation of volatile compounds on gas-liquid chromatography columns, 4560.

Kiesvaara, M. See Kreula, M., 1875. Kiff, P. R. See Dixon, B. E., 5486. Kigel', R. A. See Zhigach, A. F., 3155. Killeen, O. P. Spectrographic detection of trace

impurities in beryllium oxide, 2076.

Killick, R. A. See Morris, D. F. C., 888, 2630,

Kim, C. K. See DeVoe, J. R., 4623. Kimball, A. P. See Zlatkis, A., 4425. Kimmer, W., and Schmalz, E. O. Rubber analysis

by infra-red spectroscopy, 2862.

Kimura, J. See Gotô, Hidehiro, 531. Kimura, W., and Harada, T. Quantitative determination of non-ionic surface-active compounds. 2839.

Kimura, Y., and Miller, V. L. Vapour-phase separation of methyl- or ethyl-mercury compounds and metallic mercury, 4838

Kindling, H. See Kreuzkamp, N., 1546. Kinell, P.-O. A recording Raman spectrograph, 3063

King, F. T. See Hirt, R. C., 3832.

King, H. H., jun. See Loveland, J. W., 65, and Rosenbaum, E. J., 773.

King, J. Estimation of lactic dehydrogenase activity, 3416.

King, J. S., jun., and Leake, N. H. Colour reaction for detecting and determining chromones and related compounds, 3348.

King, R. W. See Fabrizio, F. A., 3362. King, W.-K. See Lu, M.-L., 4221. King, W. M. See Dunbar, R. E., 1078.

Kingsbury, K. J. See Morgan, D. M., 1128. Kinley, L. J., and Krause, R. F. Serum cholesterol determinations as affected by vitamin A, 2409

Kinney, T. D. See Marsters, R. W., 4981.

Kinoshita, H. See Nakaya, J.-I., 4339. Kinoshita, O. See Kiba, T., 4686. Kinsky, S. C. Assay, purification and properties of imidazole acetylase, 3939.

Kipke, L. See Geppert, G., 2319. Kirby, H. W. See Power, W. H., 44. Kirby, L. J., Silker, W. B., and Perkins, R. W. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part II. Instru-mentation, remote-control techniques and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958. Determination of radioactive rare-earth elements in reactor effluent water, 3103.

Kirichenko, A. I. Spectrographic determination of sodium and potassium in fireclay, dinas [silica brick), magnesite and other refractory materials, 1262

Kirillov, P. L., Kozlov, F. A., Subbotin, V. I., and Turchin, N. M. Purification of sodium from oxides and control of its oxide content, 4121.

Kirionova, L. A. See Pivovarov, V. M., 5508. Kirk, P. L. See Grunbaum, B. W., 5097.

Kirman, D. Chromatographic micro-applicator, 4050

Kirschnek, H. See Hempel, H., 1449, and Kaufmann, H. P., 2480.

Kirshbaum, A., and Arret, B. Outline of details for assaying the commonly used antibiotics, 3471. - Arret, B., and Harrison, S. D. Dose - response lines for antibiotic microbial assays, 708.

- Kramer, J., and Arret, B. Assay and control of antibiotic discs, 5412.

- See also Deutschberger, J., 3600, and Kramer, J.,

Kirst, H. See Geyer, R., 4575.

Kirsten, W. J. [International Symposium on 1958] Deter-Microchemistry. Birmingham, 1958.] Determination of sulphur and halogens, 3102. Nitrite in the determination of halogen in organic compounds, 4313. Metal oxides in organic elementary analysis, 5260.

- and Carlsson, M. E. Determination of phosphorus in organic compounds, 4813.

Kiseleva, M. S., Neporent, B. S., and Fursenkov, V. A. Spectral determination of water vapour in the upper atmosphere, 2490.

Kiselevskii, L. I. Spectrographic analysis of brass with the "rectified" arc method of excitation, 1272. Kishimoto, S. Determination of nitrogen content

of acrylic polymers. II, 4388.

Kishimoto, Y., and Radin, N. S. Isolation and determination methods for brain cerebrosides. hydroxy fatty acids and unsaturated and saturated fatty acids, 5366.

Kisilevich, G. A. Fluorescence m determination of gallic acid, 3337. Fluorescence method for the

Kisilevskii, V. V., and Tyutyunnikova, T. I. Flamephotometric determination of sodium, potassium, lithium and calcium with the use of a liquid fuel,

Kiss, S. A. Arsenometric determination of cuprous and cupric ions in the presence of each other, 3631. Determination of sulphur dioxide and hydrogen sulphide in generator gas, 4861.

Kissa, E. Isolation of microbalances against vibrations, 5061.

Kitagawa, H., and Aimoto, Y. Determination of iron, manganese and zinc in ferrites, 525.

- and Shibata, N. Spectrophotometric determination of vanadium in iron and steel by the tungstophosphoric acid method, 536. Spectrophotometric determination of phosphorus by the extraction of molybdovanadophosphate with isobutyl methyl ketone, 1708.

Kitagawa, T. Photometric titration of indium by the use of an indirect indicator, 4169.

Kitaigorodskii, I. I., and Frolov, V. K. Determination of vanadium oxides in glass by oxidimetry, 5212.

Kitajima, M. See Hanada, Y., 4364, and Noguchi, M., 4363.

Kitamura, M., and Iwas, I. Diacetyl monoxime method for the determination of urea in blood and urine, 1486.

Kitazato, T., and Saeki, Y. Determination of a small amount of selenium in sulphide ores, 3720. Kivalo, P. See Harva, O., 1613.

Kivirikko, K. I., and Smaa, M. L. Colorimetric method for determination of hydroxyproline in tissue hydrolysates, 4427.

Kjær, A. See Larsen, P. O., 4944. Klassova, N. S. See Sinyakova, S. I., 2207.

Klátil, M., and Mikl, O. Determination of potassium persulphate in butadiene - styrene latex, 629.

Klauck, A. See Eisenbrand, J., 1915.

Klaushofer, H. Micro-organisms in analytical chemistry, 5126.

See also Janisch, H., 3960.

Klaveren, F. W. van, and Vaillancourt, G. Horizontal paper chromatography of amino acids,

Klebe, J. F. See Simon, H., 564.

Kleber, W., Franke, G., and Schmid, P. Analysis of hop concentrates, 4485.

Hartl, A., and Schmid, P. Determination of vitamin A in nutritious beverages with high extract content, 3994.

Lindemann, M., and Franke, G. Detection of quaternary ammonium compounds, 4487.

and Schmid, P. Tannin determination in beer and wort by ultra-violet spectrophotometry,

Schmid, P., and Franke, G. Determination of iron in beer, 747.

Kleemann, E., and Herrmann, G. Adsorption of tellurium^{IV}, iodide and iodate on anion-exchange resins, 4755.

Klein, B. See Weissman, M., 1481. Klein, C. See Harel, S., 922.

Klein, P. D., and Janssen, E. T. Fractionation of cholesteryl esters by silicic acid chromatography, 1523.

Klein, See Séris, G., 4747.

Klein, S., James, A. E., and Tuckerman, M. M. Spectrophotometric assay for combinations of ethinyloestradiol and methyltestosterone, 5411. Kleiner, K. E., and Obolonchik, N. V. Determination

of oxygen in metals and oxides by means of sulphur chloride. III. Determination of oxygen in chromium, titanium and zirconium oxides and certain metals and alloys, 3716.

Kleinstein, A. See Papafil, M., 4266. Kleitsch, W. P. See Keenan, M. P., 662.

Kler, M. M. See Sheinina, G. A., 1265. Kleschick, A. See Schwarz, H. P., 5364.

Klimecki, W. J. Analytical line of silicon, 3680. Klimenko, Yu. V. See Fedorova, M. N., 66. Klimkovich, E. A. See Usatenko, Yu. I., 3277.

Klimova, V. A., and Merkulova, E. N. Simultaneous determination of carbon, hydrogen and halogens,

- and Mukhina, G. K. Simultaneous determination of carbon, hydrogen, sulphur and halogens, 3782.

and Zabrodina, K. S. Simultaneous microdetermination of carbon, hydrogen and nitrogen in nitrogenous compounds, 551. Micro-determination of keto groups by the method of oxime formation, 1777.

Kling, R. Volumetric method of determination of sulphates in the presence of chromium, 472.

Kłoczko, E. See Górski, A., 3552.

Kloes, C. J. Schooneveldt-van der. See Schooneveldtvan der Kloes, C. J. Klopper, W. J. See Jansen, H. E., 1928. Klučík, J. See Kemka, R., 4736.

Klumb, H., and Dahlem, T. Detection of long-halflife particle aerosols in the atmosphere, 4020.

Klumpar, J., Majerová, M., and Jiroušek, P. Measurement of radio-isotopes by a windowless counter and comparison of the results with the window Geiger - Muller tube, 2026.

Klyachko, Yu. A., and Izmanova, T. A. Methods of determining hydrogen in relation to the chemical composition and structure of steel, 141. Labut'ev, Yu. D., Mil'chev, V. A. Potentiostat

for electrochemical analysis, 4593.

Knapp, A. See Kupke, G., 3907. Knapp, W. G. Modified 4:7-diphenyl-1:10phenanthroline method sensitive to I p.p.b. [U.S.A.] of iron in high-purity water, 1586. Internal electrolysis - coulometric method for determination of small quantities of oxygen, 1717.

Kneip, T. J., and Dowdy, J. D. [Second Conference -Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Indirect assay of uranium tetrafluoride by the polarographic determination of uranyl fluoride, 335.

Knight, C. S. Two-dimensional paper-chromatographic method applied to the separation of

amino acids, 3428.

Knight, J. D., and House, R. Analysis of surfactant mixtures. I, 1447.

Knight, R. A. Detection and estimation of fungal amylases in flour, 3980.

Knight, W. S., and Osteryoung, R. A. Amperometric and constant-current potentiometric titration of ethylenediaminetetra-acetic acid with copper11, 587.

Knižek, J. See Franc, J., 1804.
Knobloch, E., Ledvinová, Z., and Hais, I. M. Studies of anticoagulants. XXXI. The paper chromatography of methylated products of Pelentan [ethyl biscoumacetate] and dicoumarol with diazomethane, 2438.

Knop, J., and Komenda, J. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Photometric determination of nitrate with N-methyldiphenylamine-p-sulphonic acid, 2031.

Knouse, W., and Routh, J. I. Plasma protein fractions by the Kjeldahl and biuret methods and refractive index measurements, 679.

Knox, J. H. Constant-flow device for temperatureprogrammed gas chromatography, 1611.

Knox, J. O. See Cole, J. R., 1199. Knutsen, K. See Marcuse, R., 732.

Knyazeva, E. M. See Chernikhov, Yu. A., 440, and Luk'yanov, V. F., 4204, 4717. Knypl, J. S., and Antoszewski, R. Method for

determining the area of spots in paper chromatography, 4055. Determination of small amounts of adenine, 4939.

-See also Antoszewski, R., 2162, 4731.

Kobayashi, Y., and Murata, Y. Determination of acetaldehyde in ethylene oxide vapour with a detector tube, 2278.

Koch, L. Isolation and estimation of 2-naphthol in D & C Red 36 [C.I. Pigment Red 4], 1454.

Koch, O. G. See Meyer, S., 1014, 2734. Koch, W., Eckhard, S., and Stricker, F. Spectral

gas analysis, 3060. - Jellinghaus, W., and Rudhe, H. Analysis of cementite in chrome steels by measuring the

magnetic properties, 5250. and Sundermann, H. Isolation of "structural" constituents in steel, 529.

Kochergin, P. M. See Vladyrchik, O. S., 2303, 3341. Kochergina, T. Ya., and Zaitseva, V. A. Spectrographic determination of copper, tin, antimony, bismuth and silver in antimonial lead, 2669.

Kochneva, V. A. See Aleskovskil, V. B., 873. Kock, W., Eckhard, S., and Stricker, F. Spectrometric determination of gases in steel, 137. Kodama, M. See Tanaka, N., 1221.

Koeckhoven, L. van. See Wachsmuth, H., 3923.

Koehler, H. M., and Feldmann, E. G. Qualitative identification of local anaesthetics in their dosage forms, 3966.

See also Feldmann, E. G., 2940.

Koenig, L. R. Sub-micron determination of silver iodide, 2073.

Koenuma, Y. See Nitadori, J., 2833.

Koether, B. Quantitative determination of 15 food colours, 3990.

Kofler, A. See Brandstätter-Kuhnert, M., 1535, 2411, 5398.

Kofler, M. See Planta, C. von, 1082

Koga, Y., Kajiwara, M., and Kawaguchi, M. Determination of sulphur compounds in ARAMCO crude oil. Spectrophotometric determination of aliphatic sulphides in the naphtha fraction. 2323.

Kohberger, D. L., Fisher, M. W., Galbraith, M. M., Hillegas, A. B., Thompson, P. E., and Ehrlich, J. Biological studies of streptimidone, 3958. Kohlmann, P. See Seris, G., 4059.

Kohlschütter, H. W., and Getrost, H. Separations

of cations on silica gel columns, 349.

Kohman, L. See Minczewski, J., 978. Kolchev, M. K. See Karolev, A. N., 928. Koizumi, K. See Takiura, K., 1061, 3407. Kojima, M. See Iguchi, A., 586.

Kokeš, D. See Langmaier, F., 1462. Kokes, K. See Pohl, F. A., 4701.

Kokes, R. J. Helium densitometer, 5062. Kokubo, E. See Kuroiwa, Y., 2468.

Kolbach, P., and Sack, G. Determination of higher alcohols in beer, 2466.

Kolbovskii, Yu. Ya., and Krizhanovskaya, M. K. Spectrographic determination of aluminium in alloyed steels by a solution technique, 3260.

Kolchin, I. K. See Mikhallenko, Yu. Ya., 5295. Kolchkova, A. F. Spectrographic analysis of refractory clays and fireclay refractories, 1387.

Kolling, O. W., and Smith, M. L. Triphenylmethane dyes as acid - base indicators in glacial acetic acid, 2598.

Kolmeschate, G. J. van. See Tertoolen, J. F. W., 3740

Kolšek, J., and Perpar, M. Colour reactions of certain polyhydric phenols with p-dimethylaminobenzaldehyde, 186. Paper chromatography of naphtholsulphonic acids, 3827.

Kolthoff, I. M., Meehan, E. J., Bruckenstein, S., and Minato, H. Determination of traces of hydroperoxide by reaction with arsenic^[11]. Application to determination in polymer latex,

4888

Meehan, E. J., and Sambucetti, C. J. Voltammetric, potentiometric and amperometric studies with a rotated aluminium-wire electrode. Amperometric titration of fluoride with aluminium, 5241.

and Sambucetti, C. J. Voltammetric, potentiometric and amperometric studies with a rotated aluminium-wire electrode. I. Voltammetric behaviour of the R. Al. E., 1635; II. The R. Al. E. as indicator electrode in potentiometric and amperometric acid - base titrations, 2021: III. Amperometric determination of fluoride with the R. Al. E., 2217; IV. A comparison of the Baker and Morrison cell with the R. Al. E.,

Willeford, B. R., jun., and Singh, D. Amperometric titration of albumin in blood serum by copper11, 3913.

Koltunova, V. I. Polarographic determination of tocopherols in vegetable oils, 4507.

Kołyga, S. See Minczewski, J., 16, 111, 116. Kolykhalova, S. I. See Ivanova, E. A., 530. Komarova, L. A. See Eskevich, V. F., 4247. Komarovskii, A. G. Spectrographic micro-analysis

of high-alloyed steels and heat-resisting alloys,

Komatsu, S., and Iwakuma, Y. Colorimetric determination of phosphoric acid by the molybdenum blue method with phenylthiosemicarbazide as reducing agent, 2161.

- and Tadokoro, T. Colorimetric determination of molybdenum with phenylthiosemicarbazide, 481. - and Taki, K. Colorimetric determination of

palladium with phenylthiosemicarbazide, 1027. Taki, K., and Takada, M. Turbidimetric titration of thorium with standard ammonium

oxalate solution, 4211.

Komenda, J. See Knop, J., 2031. Komers, K. Use of electrodes screened by some polymers in the potentiometric indication of the end-point, 4612.

Komers, R. See Janák, J., 1433, and Lukeš, V.,

Komisarek, J. See Fornwalt, D. E., 335. Komiya, S. See Imai, I., 2265.

Kondo, Akira, and Fuke, Y. Determination of ferrous iron in samples containing metallic and ferric iron, 2728.

Kondo, Asaji. Organic elementary analysis with a micro-bomb. V. Determination of fluorine in organic compounds by titration with aluminium chloride, 4314.

Kondrashina, A. I. See Solodovnik, S. M., 444. Kondrat'ev, D. A., Markov, M. A., and Minachev, Kh. M. Analysis of mixtures of C5 to C7 hydrocarbons by gas - liquid chromatography, 3355.

Konečný, Z. Photometric determination of silicon,

König, K. See Pohloudek-Fabini, R., 246. Konkoly-Thege, I. See Pungor, E., 897, 3644. Kon'kova, O. V. See Tsyvina, B. S., 76, 3171. Kono, M. See Uno, T., 2945.

Kononenko, L. I., and Poluektov, N. S. Colorimetric determination of zirconium in ores containing phosphates, 2131. Photometric determination of germanium with benzopyrylium compounds, 4190.

See also Poluéktov, N. S., 998.

Konopicky, K., and Schmidt, W. Flame photometry, 4641. Enhancement of the flame spectrum of

aluminium by fluoride ions, 5173.

Konupčík, M., and Manoušek, O. Polarographic determination of 5-acetamidomethyl-4-amino-2methylpyrimidine and the sulphate of 4-amino-5-aminomethyl-2-methylpyrimidine in production samples, 4464.

Kopa, L. Determination of oxygen in aluminium by means of vacuum fusion, 52.

See also Dufek, R., 1690.

Kopanica, M., and Přibil, R. Utilisation of ternary and ion-association complexes in chemical analysis. II. Polarographic determination of indium, 5179.

- See also Přibil, R., 997, 2241, 3618.

Koppanyi, T. See Goldbaum, L. R., 3873. Koppe, R. K. See Adams, D. F., 1184, 2702.

Korabel'nik, R. K. Influence of iron on the colorimetric determination of manganese, 1346.

Körber, K. Device for measuring the moisture content of tobacco or like fibrous material, 2513.

Körbl, J. See Buděšínský, B., 2261, 3972, 4340, 4814, Horáček, J., 4304, Jančik, F., 2293, and Vydra, F., 2071, 2223,

Koreneva, V. V. See Dýmov, A. M., 522. Korenman, I. M., and Ganichev, P. A. Separation of small amounts of thallium from dilute solutions,

Ganina, V. G., and Bochkarev, V. V. Microcrystalloscopic reactions for salts of thallium oxide, 915.

and Grishin, I. A. Fluorescence reactions of beryllium and aluminium, 892.

Gunina, V. P., and Trifonova, L. K. Colour reactions for scandium, 3168.

- Kurina, N. V., and Karnishin, A. A. Azo

dyes as reagents for cobalt, 1017.

Sheyanova, F. R., and Efremov, N. A. Radiometric titration of copper and zinc, 885.

Sheyanova, F. R., and Kunshin, S. D. Colour and fluorescence reactions for gallium, 4163. and Yunina, V. I. Colour reaction of nitrites,

945. Korinth, E. Analysis of chlorosulphonic acid, 4234. Korkisch, J., and Antal, P. Method for concentrating thorium from nitric acid - ethanol solution with Dowex-1 strongly basic anion-exchange resin. Its use in the determination of thorium in silicate rocks, 3195. Determination of microgram quantities of thorium in silicate rocks, sediments, and other materials after enrichment of thorium by means of ion exchange, 4212.

Antal, P., and Hecht, F. Determination of uranium and thorium in natural waters after prior enrichment on Amberlite IRA-400 and Dowex-50, 780. Adsorption of uranium from a hydrochloric acid - ethanol solution on the strongly basic anion-exchange resin Dowex 1. Determination of microgram amounts of uranium

in solid materials, 4245.

and Osman, M. The analytical chemistry of zirconium. V. Solochrome violet R as a reagent for the spectrophotometric determination of microgram quantities of zirconium, 2673. Solochrome violet R as reagent for the spectrophotometric determination of microgram amounts of molybdenum, 3224.

Kornacki, J. See Kemula, W., 433, 470, 471. Korneev, V. A. Methods for spectrographic analysis of rare elements. I. Analysis of complex

mixtures of rare earths, 5180.

Kornel, L. Method for free and conjugated 17hydroxycorticosteroids in plasma, 3927.

Korneva, L. E. See Gengrinovich, A. I., 5003. Kornfeld, H. See Hartleif, G., 1755. Kornyakov, V. S. See Oziraner, S. N., 1998. Korobko, F. D. See Grinzald, E. L., 3747. Korol', A. N. Analysis by means of gas-liquid

chromatography of products of manufacture of phenol and synthetic ethanol, 3815.

Znamenskaya, N. B., and Losev, L. P. Automatic determination of moisture in a gas by means of Fischer's reagent, 3583.

Korolev, N. V. See Agroskin, L. S., 2562. Korolev, V. V., and Vainshtein, E. E. Impulse source for spectra excitation in the analysis of silicates, 67. Plasma generator as excitation source in spectrographic analysis, 3566.

Körös, E. [International Symposium on Micro-Birmingham, 1958.] Some new chemistry. possibilities in EDTA titrations, with methylthymol blue as indicator, 3102.

- and Barcza, L. Some chelatometric titrations of iron11, 2224.

- See also Bareza, L., 3710, and Přibil, R., 48.

Korosteleva, V. A. See Filippova, N. A., 881. Korovin, V. A. See Kostrikin, Yu. M., 3660. Korpaczy, I. Colorimetric determination of the

phosphorus content of lipids, 2381.

Korpak, W., and Majchrzak, K. Determination of traces of butanol in tributyl phosphate by the float method, 2787.

Korshun, M. O., Sheveleva, N. S., and Gel'man, N. E. Micro-elementary analysis. XVII. Simultaneous micro-determination of carbon, hydrogen, mercury and halogen from a single sample of organic substance, 4307.

See also Gel'man, N. E., 5264, and Terent'eva,

E. A., 4200.

Korshunov, I. A. See Vertyulina, L. N., 1408. Korte, F., and Sieper, H. Paper-chromatographic identification of substances contained in hashish,

Korthum, K., and Ashbrand, M. Quantitative analysis of wool felts containing cellulose and casein fibres, 5323.

Kortüm, G., and Vogel, Josef. Quantitative evaluation of paper chromatograms by reflectance measurements, 1994.

Korzenovsky, M., Diller, E. R., Marshall, A. C., and Auda, B. M. Manometric assay and properties of pancreatic cholesterol esterase, 5391.

Kosciesza, B. See Secrest, P. J., 1463. Koseki, K. See Nitadori, J., 2833. Koshkin, N. V. Thiosemicarbazides in analysis. Detection and determination of copper with aryl- and diaryl-thiosemicarbazides, 371: III. Titrimetric determination of thiosemicarbazides with mercuric nitrate 5290. Quantitative determination of mercury1 and mercury11 with 1-phenylthiosemicarbazide, 402. Volumetric determination of copper, cadmium and mercury, 2053

Koshy, K. T., and Lach, J. L. Quantitative separation of N-acetyl-p-aminophenol and p-aminophenol by ion-exchange chromatography, 4459.

Kosikowski, F. V. See Silverman, G. J., 1918. Kosin'skii, M. See Terent'ev, A. P., 5305.

Koskela, U. See Feldman, C., 3103. Koski, M. See Oja, O., 2266.

See McChesney, E. W., 3970. Koss, R. F. Kostenzer, O. See Brandstätter-Kuhnert, M., 5398.

Köster, R. See Schomburg, G., 2790.

Kostie, I. Lj. See Milićević, B. T., 3540.

Kostin, N. V. Photometric determination of small amounts of zinc in bearing metal, 4147.

Kostrikin, Yu. M., and Korovin, V. A. Volatility of boric acid, 3660.

Kostujak, K. See Debska, W., 1538. Kostyra, H. See Hegemann, F., 2246.

Kostyukova, E. S. Spectrographic determination of hafnium in ores and minerals, 78.

— See also Raikhbaum, Ya. D., 2100. Kotarski, A., and Marczenko, Z. Separation by distillation and photometric determination of small amounts of selenium, 5223.

Koter, M., and Panak, H. Colorimetric determination of phosphoric acid in plant materials by a molybdovanadate method, 5351.

Kotera, K. See Imai, I., 2265. Kotlinskaya, B. See Sekerskii, S., 4746.

Kotlyar, E. E., and Nazarchuk, T. N. Determination of free boron in boron carbide, boron nitride and alloys based thereon, 5168.

Kotrbová, M. Spectrographic determination of traces of metal impurities in iron, 4273.

Kott, Y., and Lichtenstein, N. Determination of lysine in protein hydrolysates using lysine decarboxylase from Salmonella hadar, 5369.

Kourey, R. E., Tuffly, B. L., and Yarborough, V. A.
Mass-spectrometric determination of hydroformylation products of ethyl sorbate, 2777.

— See also Warren, G. W., 2264.

Kovács, E., and Guyer, H. Photometric determination of small amounts of copper, bismuth, antimony and tin in metals and alloys, with sodium

tetramethylenedithiocarbamate, 352.

Kovács, G. S., and Tárnoky, K. E. Plasmocorinth B disodium 5-chloro-2-hydroxyphenylazo-1:8-dihydroxynaphthalene-3:6-disulphonatel as indicator for complexometric titrations, 2042.

Kovács, P. See Dzúrik, R., 658.

Kovalenko, P. N. Mutual displacement reactions of metals. I. Reduction of bismuth and copper with metallic cadmium and lead and their polarographic determination, 1255; II. Polarographic determination of small amounts of metallic zinc in zinc white, 1255; III. Rapid polarographic determination of lead in granulated slag, 1255. Electro-analytical determination of bismuth, Polarographic determination of small amounts of lead and cadmium in copper electrolytes (rapid method), 3139.
- and **Dmitrieva**, **V. L.** Separation of copper and

bismuth by electro-deposition with an amalgam -

copper cathode, 2072.

and **Geiderovich**, **O. I.** Polarographic determination of beryllium in a basal solution of tetraethylammonium iodide, 2631.

- and Ignatova, L. A. Separation of cadmium from small amounts of zinc in nitric acid - citric acid solution with an aluminium cathode, and the polarographic determination of zinc, 1291.

and Moricheva, N. P. Photometric determination of antimony in zinc electrolytes and alloys, 4220

See also Ivanova, Z. I., 1280, Lektorskaya, N. A., 1287, 2054, 3128, and Nadezhdina, L. S., 1288.

Kovalev, I. A. See Egorov, N. P., 2061. Kovařik, M., and Moučka, M. Detection and deter-

mination of thallium with methyl violet, 55 Kováts, E. See Tóth. P., 2535, and Wehrli, A., 2535

Kowalczyk, J. Quantitative evaluation of paper electropherograms of blood serum obtained by electrophoresis, 2897.

Kowalewski, Z. Quantitative determination of capsaicin in capsicum fruits, 1159.

Koyama, K. Square-wave polarography of plutonium, 4766.

Koyama, T. Direct determination of argon and nitrogen, 359.

Kozák, P. See Jureček, M., 277. Kozáková, M. See Večeřa, M., 5286. Kozan, V. B., Fridman, V. M., and Romanova, T. G. Separation of aliphatic alcohols and hydrocarbons by extraction, 177.

Kozierva, G. V. See Tarasevich, N. I., 2181.
Kozlov, A. G. See Krot, N. N., 983.
Kozlov, F. A. See Kirillov, P. L., 4121.
Kozlov, V. V., and Davýdov, A. A. Determination of anthraquinonesulphonic acids, 2315.

Kozlova, A. B. See Chernikhov, Yu. A., 2680.

Kozlovskii, M. T. See Zebreva, A. I., 3674. Bromimetric determination of oestrogenic stilbene derivatives, 1556.

Krajčinović, M., Prohaska, B., Herman, D., and Engel, D. Formolite reaction. Determination of aromatic hydrocarbons in mineral oils, 2825.

Král, J. See Krejčí, E., 665. Král, S. Chemical analysis of tantalum - niobium ores and concentrates, 2700. Chemical analysis of calcined molybdenum trioxide, 4758.

Kraljić, I. Decomposition of ferrocyanide in analysis. I. New spot test for silver. 4131.

- and Mate, M. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Photometric micro-determination of cyanides,

Krall, G. See Ciuhandu, G., 2114, 3678. Kramer, J., and Kirshbaum, A. Cylinder plate assays for amphotericin B in dosage forms and body fluids, 5002.

See also Kirshbaum, A., 5412.

Krampitz, G., and Albersmeyer, W. Separation of phenolic compounds on ion-exchange resins, 2794.

Müller, R., and Vollmers, M. Estimation of amino acids in biological material. VI. Methods for rapid estimation of amino acids and related ninhydrin-positive compounds, 4422.

Kranz, M., and Krżyzniak, J. Colorimetric determination of vanadium as vanadyl sulphate, 5211. Krasil'nikova, L. N. Colorimetric determination of bismuth in products of lead manufacture,

- and Maksai, L. I. Colorimetric determination of aluminium in raw materials and fluxes used in

lead production, 411. Krasnobaeva, N. M. Spectral determination of

indium, thallium and gallium, 54. Krasnova, Z. A. See Tsimmergakl, V. A., 1289, 4684.

Krässig, H. See Hurtubise, F. G., 4332. Krasznai, I. See Tóth, Z., 2297. Kratochvil, B., and Diehl, H. Determination of cobalt by oxidation with potassium molybdicyanide, 4284.

See Kudláček, V., 3819.

Kratochvil, P. See Kudláček, V., 3819. Kratochvil, V. Dimedone in the photometric determination of cyanides, 3679.

Langner, J., and Vlasák, R. Determination of benzidine in the atmosphere, 3005.

Matrka, M., and Marhold, J. Photometric determination of benzidine, diphenyline, obenzidine, o-tolidine and o-dianisidine, 3822.

Kratz, P., Jacobs, M., and Mitzner, B. M. Smokeeliminating device for a vapour-phase chromatographic-fraction collector, 3052.

Kratzl, K., and Gruber, K. Quantitative separation and identification of alkoxyl groups by gas - liquid chromatography, 1055.

Kraus, L. Quantitative determination of aloin in Aloe capensis. II. Colorimetric determination, 248. Anthracene derivatives in drugs, 2931.

Krause, D. See Frey, H.-H., 1545.

Krause, R. F. See Kinley, L. J., 2409.

Krauss, G., Rebmann, A., and Egner, H. Contri-bution to the analysis of hops, 4484.

Krauss, M. T., Jäger, H., Schindler, O., and Reichstein, T. Deoxy sugars. XXXIII. chromatographic separation of the hexamethyloses [6-deoxyhexoses] and their 3-O-methyl derivatives, 3879.

Krauze, S., and Bożyk, Z. Polarographic determination of vitamin C in fresh fruit and vegetables,

and Piekarski, L. Electrophoretic separation and quantitative determination of dyestuffs,

 See also Bożyk, Z., 5468.
 Kravchenko, V. S., Birenberg, I. É., Karpov, E. F., and Magidson, I. A. Catalyst for the determination of methane in the atmosphere of mines, 3297

Krawczyk, W. See Zagórski, Z., 129. Krc, J., jun. [Progress in microchemistry.]

Chemical microscopy, 2033.

Kreimer, S. E., and Butylkin, L. P. Extractive determination of iron and cobalt in pure nickel, 1751.

See Berther, C., 2294. Kreis, K.

Krejčí, E., Kůtová, M., Král, J., Ženíšek, A., and Stolz, J. Polarographic determination of urocanic acid. 665.

Krejčí, M., and Janák, J. Zeolites in gas chromato-II. Determination of argon in the presence of oxygen and other inert gases, 3623.

and **Tesařík, K.** Zeolites in gas chromatography. neon and hydrogen at normal temperature, 4659.

Krejzová, E., Kruml, J., and Plocek, L. Analysis of

aluminium oxide, 2096.

Kremsbrucker, H. Schöniger combustion method for the determination of small amounts of phosphorus in organic substances, 3942. Identification of some water-soluble derivatives of theophylline and theobromine, with special reference to paper chromatography, 3952.

Kreshkov, A. P., Bykova, L. N., and Mkhitaryan, N. A. Tetraethylammonium hydroxide for the potentiometric titration of weak acids in non-

aqueous solutions, 2775. Kresze, G. See Schrader, B., 3064.

Kreula, M., and Kiesvaara, M. Determination of L-5-vinyl-2-thio-oxazolidone (L-5-vinyl-2-oxazolidinethione) from plant material and milk, 1875. Kreutzer, H. H. Automatic pipette, 4040.

Kreuzkamp, N., Ebel, S., and Kindling, H. Quantitative determination of drugs in mixtures and galenicals. I. Amidopyrine, 1546.

Kreyenbuhl, A., and Weiss, H. Analysis of phenols by gas-phase chromatography, 5297.

Krickau, G. See Hauss, W. H., 2884.

Kriege, O. H. Analysis of refractory borides, carbides, nitrides and silicides, 1388.

Kripskii, A. M. Spectrographic determination of sulphur in iron-base alloys, 1370.

Krishnamurthi, M. See Sarma, P. S. N., 1554. Krishnamurthy, G. V. See Jain, N. L., 1176.

Krishnamurthy, K., Srinivasan, K. S., and Majumder, K. Detection and estimation of Citicide, 2508. See also Venkat Rao, S., 1172, 2975, 3981.

Krishnan, P. S. See Tewari, K. K., 4217. Kristaleva, L. B. Colorimetric determination of impurities in arsenic, 3201.

Kristiansen, H. See Langmyhr, F. J., 912.

Kriváň, M., and Matherny, M. Quantitative solution spectral analysis of macro components of bauxite, 3774.

Kriváň, V. See Hostomský, J., 4823.

Křivánek, M. See Havíř, J., 2621.

Krizhanovskaya, M. K. See Kolbovskii, Yu. Ya., 3260. Kroeze, H. K. See Asselbergs, C. J., 5488. Kromrey, W. Sugar determination in tomato pulp

according to Meissl and Allihn with quantitative sedimentation analysis. IV, 738.

Kronmueller, G. Sensitive probe for the Photovolt densitometer, 1607.

Krot, N. N., Smirnov-Averin, A. P., and Kozlov, A. G. Spectrophotometric determination of magnesium in uranium, 983.

Krotova, I. K., and Chepelevetskii, M. L. Determination of orthophosphates, based on the precipitation of bismuth phosphates in acid medium, 947

Kruchkova, E. S. See Mustafin, I. S., 4098. Krueger, P. J. See Angell, C. L., 3818. Krüger-Thiemer, E. See Diller, W., 1906. Kruglova, F. L. See Pozdeeva, A. G., 2836. Krumholz, P. See Bril, K., 3177.

Kruml. J. See Krejzová, E., 2096.

Krupička, J., and Gut, J. Components of nucleic acid and their analogues. VI. Polarographic determination of 6-azauracil and 6-azauridine.

- and Novák, J. J. K. Polarographic determination

of pyruvaldehyde, 5279. Kruse, J. M. componds by controlled-potential coulometry, 2800

Krýlov, V. P., and Drozdov, N. S. Barbituric and 2-thiobarbituric acids for the quantitative determination of nitrite, 1328.

See also Drozdov, N. S., 5289.

Krýlova, A. N. Detection of antimony in biological materials by fractional analysis, 3394.

Krýlova, T. N. See Sokolova, R. S., 2557. Kryukov, P. A. See Goremýkin, V. E., 4119. 4514

Kryzhnaya, V. F. See Belokrinitskaya, E. E.,

Krzyzniak, J. See Kranz, M., 5211. Kshatriya, K. C. See Vasa, M. L., 2289.

Kubeš, J. See Macak, J., 3816.

Kubinová, M. Supports for gas - liquid separation chromatography, 2539.

Kubis, J. Method for the oxidation of methanol and for its colorimetric and polarographic determination, 1783. Polarographic determination of methanol and ethanol, 2267.

Kubisz, K. See Sędzimir, J., 4196. Kublik, Z. See Kemula, W., 322, 1683, 3088, 4255.

Kubo, S., and Tsutsumi, C. Ultra-violet spectrophotometric determination of calcium in plants with chloranilic acid, 636.

Kubota, H. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] The volumetric determination of microgram quantities of boron, 335.

Kubota, T., and Takamura, T. Determination of methyl and phenyl groups in methylphenyl-siloxane polymer by NMR spectroscopy, 3849.

Kuchar, E. J. See Norris, M. V., 1593. Kuczyński, L. See Zawisza, T., 4993. Kudalkar, V. G. See Anantanarayanan, K. G.,

Kudelya, E. S. Standardisation method in the spectrographic analysis of metal alloys, 863. Spectrographic determination of tin and vanadium in titanium alloys, 927. Spectrochemical determination of aluminium in chromium - nickel austenitic steel and seam welds, 3750.

Kudláček, V., Bořek, J., and Kratochvíl, P. Determination of p-toluic and terephthalic acids in the

presence of each other, 3819. Kudryavtseva, N. A. See Tarasov, A. I., 1997.

Kudýmov, B. Ya., Malinina, V. I., and Varlamov, V. P. Spectrographic analysis of water for chlorine, bromine, iodine and sulphur, 1186.

Kuehner, E. C. See Leslie, R. T., 5125.

Kuemmel, D. F. See Lohman, F. H., 2225. Kuffner, F., and Kallina, D. Separation of isomeric alcohols by means of gas - liquid chromatography. Separation of saturated Cs alcohols, 5268.

Kugler, E. See Toth, P., 2535.

Kühn, W. Moisture determination by elastic scattering of fast neutrons, 870.

Kühnel, E. Rosin and lignin reactions for the identification of fibrous raw materials in paper,

Kuiken, K. A. See Saltsman, W., 3374.

Kukovetz, W. R. See Touchstone, J. C., 2413. Kuksis, A., and Beveridge, J. M. R. Paperchromatographic fractionation of plant steryl esters, 4438.

esters, 4438.

Kulawic, D. See Amberg, C. H., 173.

Kulcsár, M. See Benkő, I., 3705.

Kulichikhina, R. D. See Filippova, N. A., 5224.

Kulonen, E. See Haahti, E., 5497.

Kumagai, R. See Nasu, T., 1678.

Kummerow, F. A. See Bhalerao, V. R., 2773.

Kumov, V. I. See Gusev, S. I., 5213.

Kündig, S. Portable apparatus for the automatic analysis of air in factories. 280.

analysis of air in factories, 280. Kundu, K. K., and Das, M. N. Determination of phenylmercury acetate, 722. Mercuric acetate as an analytical reagent in non-aqueous titrimetry,

1246.

Kunenkova, E. N. Determination of gallium in gallium - copper and gallium - magnesium alloys, 913. Determination of lanthanum and thallium in lanthanum - thallium alloys, 1309.

Kunin, R. [Review of fundamental developments

in analysis.] Ion exchange, 5125. Kunkel, R. K., Buckley, J. E., and Gorin, G. Determination of alkanethiols in hydrocarbons with silver ion and dithizone, 612.

Kunshin, S. D. See Korenman, I. M., 4163.

Kunstmann, F. H., and Müller, E. F. E. Absorptiometric determination of germanium with phenylfluorone, 69.

Kuntze, M., and Hädicke, M. Determination of the alkaloid content of tinctures of nux vomica and aconite with aluminium oxide, 2423.

Kunzová, K. See Brháček, L., 1757. Kupfer, G. See Drawert, F., 4326.

Kupferschmid, W. Influence of peptides, peptones and proteins on the determination of sugar by the Potterat - Eschmann method, 3877.

Kupka, F. X-ray diffraction analysis in the study of equilibrium systems, 2544.

Kupke, G., and Knapp, A. Excretion of a dose of tryptophan for the detection of vitamin-B. deficiency, 3907.

Kuramoto, S., Jenness, R., Coulter, S. T., and Choi, R. P. Harland - Ashworth test for wheyprotein nitrogen, 268.

Kuranov, A. A., and Ruksha, N. P. Spectrographic analysis of high-purity gold, 1275.

and Sviridova, M. M. Determination of palladium, platinum, gold, lead, bismuth, antimony, copper and iron in pure silver and the determination of antimony, bismuth, lead and iron in silver copper alloys, 1274.

Kurbatov, D. I. Polarographic study of titanium and niobium in pyrophosphoric acid solutions,

Kureš, V., and Lát, J. Polarographic determination of nitrites in albuminous medium, 261.

Kuriakose, A. K. See Yeddanapalli, L. M., 5325.

Kurina, N. V. See Korenman, I. M., 1017.
Kuriyama, M. See Hoshino, M., 760.
Kuroda, K., Fujino, M., and Kato, S. Portable micro-method for the determination of alkaline phosphatase in blood serum, 2417.

Kuroda, R. See Hamaguchi, H., 3682. Kuroiwa, Y., and Kokubo, E. Determination of 8-resin in hops, 2468.

Kurth, E. F. See Holmes, G. W., 2845. Kurtz, L. T. See Cheng, H. H., 4522.

Kurzawa, Z. Determination of cystine by the sodium azide - iodine reaction, 5373. Determination of methionine alone and in the presence of cystine by means of the sodium azide-iodine reaction, 5375.

Kurzawa, Z., and Meybaum, Z. Determination of carbon disulphide by means of the sodium azide - iodine reaction, 5184.

- and Suszka, A. Determination of small amounts of cysteine alone and in the presence of cystine by means of the sodium azide - iodine reaction,

Kurzweilová, H. See Malý, J., 5239. Kusaka, Y. Neutron activation analysis of silver by the use of a radium - beryllium source, 382. Radioactivation analysis of indium by the use of a radium - beryllium neutron source, 4171.

Kusler, D. J. Gravimetric method for analysing

blast-furnace top gas, 2325.

Kustas, V. L., and Lazebnaya, G. V. Spectrographic analysis of preparations of the rare-earth cerium group for samarium, 2106. Spectrographic determination of mixtures of rare-earth elements in samarium and europium, 4183.

Kuteinikov, A. F., and Lanskoi, G. A. Photometric determination of total rare-earth elements, 3175.

Kutkiewicz, W. See Urbański, T., 1811. Kůtová, M. See Krejčí, E., 665.

Kutschke, K. O. See Wenger, F., 2277. Kutŷreva, G. A. See Gokhshtein, Ya. P., 3178.

Kuwana, T. See Robson, H., 4687

Kuzmanova, P. See Goranov, I., 2898. Kuznetsov, I. A. See Gorshkov, V. I., 2065. Kuznetsov, L. M., Makarov, E. S., and Turovtseva,

Z. M. Quantitative X-ray spectrographic determination of oxygen in lower titanium oxides, 2127.

Kuznetsov, V. I., and Nikol'skaya, I. V. Photometric determination of uranium with arsenazo, 4760.

and **Okhanova**, L. A. Volumetric determination of microgram amounts of the rare-earth elements, 3675

- and Petrova, T. V. Thermo-spectrophotometric determination of the rare-earth elements in the

presence of thorium, 2105.

and Savvin, S. B. Photometric determination of thorium in monazites with arsenazo II reagent,

and Seryakova, I. V. Fusible extraction reagents

in analytical chemistry, 338. Kuznetsova, A. K. See Etros, S. M., 904. Kuznetsova, E. M. See Panchenkov, G. M.,

Kuznetsova, N. N. See Moiseeva, L. M., 4672.

Kuznetsova, T. F. See Rabovskii, G. V., 2694. Kuznetsova, V. K., and Tananaev, N. A. Colour reaction for gallium, 4162. Detection of gallium in the products of aluminium production, 5178.

Kuznetsova, V. P. See Shergina, N. I., 2306,

Kuznetsova, Z. M. See Busev, A. I., 4167.

Květoň, R., and Skálová, A. Determination of the degree of condensation of urea - formaldehyde resins, 2857.

Kwiatowska, S. See Urbański, T., 1811. Kwietny, A., and Zimmermann, G. Gravimetric determination of hesperidin, 5358.

Kyriacou, D. Metallic zinc as a catalyst for quantitative acetylation of some hydroxy compounds, 4322

Kysil, B. Electrolytic cell with mercury cathode.

- and Vobora, J. Determination of phosphorus in steels high-alloyed with chromium and nickel. 3262. Determination of boron in steel, 3748.

Kyte, V., and Vogel, A. I. Titration apparatus for general laboratory use. Applications to some EDTA and precipitation titrations, 3092.

L

Laar, B. van. See Boef, G. den, 91. Labuschagne, J. H., and Vogt, K. F. Gerber test for the determination of fat in milk, 5017.

 Labut'ev, Yu. D. See Klyachko, Yu. A., 4593.
 Laccetti, M. A., Semel, S., and Roth, M. Colorimetric determination of organic nitrates and nitramines, 584.

See also Semel, S., 632.

Lach, J. L. See Koshy, K. T., 4459.
Lachin, M. See Fiorenza, A., 2549.
Lacomble, M. See Mathien, V., 1755.
Lacoste, R. J., Venable, S. H., and Stone, J. C.
Modified 4-aminoantipyrine [4-aminophenazone] colorimetric method for phenols. Application to an acrylic monomer, 1096.

Lacourt, A. [International Symposium on Microchemistry. Birmingham, 1958.] Titrimetr finish of chromatographic spots on paper, 3102.

and Heyndryckx, P. Quantitative paper chromatography and direct titrimetric finish for determination of zinc spot concentrations, 399. Spectrophotometric stability of metal oxinates on filter-paper, 4647.

Lacroix, Y., and Chaverou, M. Analysis of mixtures of sulphuric and nitric acids. Conductimetry,

 Lacruche, B. See Mevel, N., 2031.
 Lacy, J., and Hill, R. V. Determination of argon and methane in gas mixtures—accuracy and precision of analysis using a simple gas-chromatographic apparatus, 2263.

Lada, Z. Determination of water in recirculated butyl acetate, 1423.

and Pacewska-Szlemińska, I. Complexometric determination of iron and aluminium in the control of production of aluminium compounds, 1304.

and Pruszyńska, J. Complexometric determination of iron, calcium and magnesium in Turkey

and Waszak, \$. Apparatus for the colorimetric determination of trace components in gases, 292.

Ladd, J. N. See Barker, H. A., 3941. Laddha, G. S. See Rao, B. K. S., 507, 880. Ladell, J., and Spielberg, N. Laue spectrometer for multi-channel X-ray spectrochemical analysis,

Ladik, J., and Szekács, I. Pedetermination of serine, 1504. Polarographic micro-

Lady, J. H., Bower, G. M., Adams, R. E., and Byrne, F. P. Determination of the ratio of methyl to phenyl groups in silicone polymers by infra-red spectrometry, 626.

LaForgia, C. K. See Schnopper, I., 1827.

La Gandara, I. J. L. O. de. See Otero de la Gandara, I. J. L.

Lagerström, O., and Samuelson, O. Determination of chloride in sulphite waste liquor, 3242.

Lago Hermida, A. See Gómez Vigide, F., 1236. Lahav, E. See Sode-Mogensen, M. T., 4476. Lai, J. R. See Callahan, C. M., 2200. Lai, M. G. See Weiss, H. V., 4677. Lais, A., and Intonti, R. Influence of the photographic emulsion on effective width, 2548.

Laitinen, H. A. Review of fundamental developments in analysis.] Amperometric titrations, 5125.

Lal, G. See Jain, N. L., 1176.

Lal, J. B., Mathur, A. P., and Patwardhan, V. M. Interference of ketones in the estimation of perfumery alcohols in synthetic mixtures by acetylation. I, 4877

Lal, M. See Taimni, I. K., 1239, 1641, 4629, 5127.

Lamar, M. A. See Grady, H. J., 4918. Lambdin, W. J. See Warren, G. W., 577. Lambert, J. L. See Walker, J. M., 4614.

Lambert, J. L. See Walker, J. M., 4614. Lambert, M. C. X-ray spectrography, 316. Fluores-

cence X-ray spectrography, 317.

Lambertsen, G., and Brækkan, O. R. Spectrophotometric determination of a-tocopherol. 3524.

Lambeth, J. See Westley, J., 4955.

Lamonica, G. See Cuzzocrea, G., 4946.

La Mont, B. D., Derby, J. V., Meinz, C. A., and Johnson, J. D. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Chemical control of pressurisedwater test loops and autoclaves, 335.

- and Johnson, J. D. Second Conference-Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, corrosion products and anions in aqueous thoria -

urania slurries, 335.

— See also Meinz, C. A., 335. Lamount, T. G. See Clark, K. G., 1961.

Lamouroux, A., and Le Duigou, Y. Colorimetric micro-determination of phenacyl

Lamparsky, D. Gas chromatography in the analysis of volatile oils, 2329.

Landers, J. W., and Zak, B. Determination of serum copper and iron in a single small sample,

Landmark, P. See Bilberg, E., 3214.

Landolt, P. E. See Howling, H. L., 2619. Landry, A. S. Simple saturated calomel reference

electrode for polarography, 5514. andua, A. J. See Anderson, W. M., 1081.

 Landua, A. J. See Anderson, W. M., 1081.
 Landucci, J. M., and Duranté, M. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Spectrophotometry after chromatographic separation of products of

colour reaction, 2031.

Lange, P. W. de. Radiometric analysis of naturally leached uranium - thorium ore samples: com-

parison of different methods, 1735.

Langer, S. H., Zahn, C., and Pantazoplos, G. Selective gas - liquid chromatographic separation of aromatic compounds with tetrahalophthalate esters, 4350.

Langer, T. See Woidich, K., 1818, 2459, 4879. Langerijt, J. J. A. M. van de. Determination of ergotamine and ergotaminine in drugs, 4994.

Langford, W. J., and Vaughan, D. J. Separation of poly(vinyl chloride) and poly(vinyl acetate) by chromatographic methods, 1460. Separation of mixed polymers by a chromatographic method,

Langmaier, F., Mück, E., and Kokes, D. Chromatography of the sulphonation products of phenol formaldehyde condensates. II. Quantitative determination of phenolsulphonic acids, 1462.

Langmyhr, F. J., and Graff, P. R. Spectrophotometric determination of silicon in materials decomposed by hydrofluoric acid. I. Loss of silicon by decomposition with hydrofluoric acid,

and Hongslo, T. Separation and gravimetric determination of niobium, tantalum and titanium precipitation N-benzoyl-N-phenylwith

hydroxylamine, 5215.

and Kristiansen, H. Indirect EDTA titration of aluminium with lead solutions and 4-(2pyridylazo)resorcinol (PAR) as indicator, 912.

Langmyhr, F. J. See also Graff, P. R., 3238, and Skaar, O. B., 2664.

Lango, M. See Kratochvil, V., 3005. Lango, M. See Basiński, A., 2679.

Lansing, R. K. See Hollinger, N. F., 1521. Lanskoi, G. A. See Kutelnikov, A. F., 3175.

Lapidus, É. S. See Nechaeva, E. A., 1035.

Lapointe, Y. S. See Richter, H. J., 4921. Laporta, L. Analysis of butter and margarine in the ultra-violet, 5431.

— See also Montefredine, A., 276, 2475. Lara, F. J. S. See Molinari, R., 5394. Laranjeira, M. See Barreira, F., 2031.

Lardy, H. A. See Hagihara, B., 4734. Larkey, B. J., and Belko, J. S. Method for prestaining alpha- and beta-lipoproteins separated by paper electrophoresis, 4964

Larnaudie, M. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Determination of traces of carbon monoxide in gases, 2031.

Larsen, I. Spectrophotometric determination of tryptophan by the method of Roth and Schuster,

Larsen, P. O., and Kjær, A. Paper-chromatographic differentiation between a-monoamino acids and other ninhydrin-positive substances, 4944.

Larsen, R. P., and Ingber, N. M. Determination of bromine in uranium fluorides and oxides, 117.

McCown, J. J., and Sovereign, W. R. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part 2. Instrumentation, remote-control techniques and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Analytical cave operations on fuel processing development samples, 3103.

and Ross, L. E. [Second Conference-Analytical Chemistry in Nuclear Reactor Technology. Part Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] The spectrophotometric determination of zirconium, molybdenum, ruthenium, palladium and cerium in uranium "fissium' alloys, 335.

Ross, L. E., and Ingber, N. M. Separation and determination of microgram amounts of sulphur, 1718.

Ross, L. E., and Kesser, G. Spectrophotometric determination of zirconium in uranium alloys of the fission elements, 5197.

Larskii, E. G. See Titaev, A. A., 680. Larson, T. E. See Weatherford, R. L., 3097. Larsson, A. Spectrographic analysis of solutions with spark excitation. Applications to lowalloy steel, copper alloys and slag, 2733.

Larsson, S. P. See Hallgren, B., 3306. Lasiewicz, K., and Byczyńska, B. Analysis of a mixture of ammonium salts of iminodisulphonic, sulphamic, nitrilotrisulphonic and sulphuric acids,

Byczyńska, B., and Zawadzka, H. Complexometric determination of calcium in technical phosphoric acid, 1282.

and Zawadzka, H. Volumetric determination of copper, lead and cadmium in pyrites, marcasite and their ash by sodium diethyldithiocarbamate, 1656.

Lassner, E., Püschel, R., and Scharf, R. Application of metal-specific indicators to precipitation V. Determination of small quantities titrations. of orthophosphate in the presence of sulphate,

Lassner, E., and Scharf, R. Complexometric titration of molybdenum. I, 107; II, 1728. Photometric determination of molybdenum in the presence of tungsten as the molybdenum v - EDTA complex, 483. Complexometric determination of the cobalt content of hard metals, 3266. EDTA titration of zirconium, hafnium and thorium in their alloys with tungsten or in tungsten metal, 4721. Analysis of zirconium - tungsten, hafnium - tungsten and thorium - tungsten alloys and of thoriated and zirconiated tungsten by means of EDTA titration, 5196.

- and Wölfel, E. Determination of low oxygen content in high-melting metals by hot extraction with Feichtinger's apparatus. I. Iron bath

method, 4748.

See also Püschel, R., 104, 4733.

Laszlovszky, J. Catalytic determination of micro amounts of cobalt in the presence of zinc,

Lát, J. See Kureš, V., 261.

Lathouse, J., Huber, F. E., jun., and Chase, D. L. Determination of nitrogen in uranium nitrides, 1740

Latimer, R. A. Wash-bottle for dispensing carbon dioxide free water, 1190.

See also Miller, D. M., 3026.

Latinák, J. Chromatography of dve intermediates. X. Chromatographic separation of hydroxy and amino derivatives of naphthalene, 2810.

Latyshov, V. A. See Azen, V. E., 5075.

Laub, H. Separation of various anions by paper chromatography, 4646.

Lauber, E. Distinction between refined and unrefined olive oils, 4008

Lauder, I. Mass-spectrometric analysis of oxygen in carbon monoxide and carbon dioxide. 4185.

Lauér, R. S., and Poluéktov, N. S. Micro-volumetric chromatographic method of determining in-dividual rare-earth elements in mixtures, 59. Determination of tantalum as an impurity in zirconium, hafnium and niobium, 2180.

Laufer, S. See Brenner, M. W., 3996.

Laufer, V. M. See Davankov, A. B., 383. Laug, E. P., and Wallace, W. C. Radioactive residues in foods before and after 1945: Evidence of possible fall-out contamination, 1559.

Laughton, P. M. See Levi, L., 3846.

Launer, H. F., and Tomimatsu, Y. Stoicheiometry of chlorite - aldehyde reactions. Analytical procedures, 1413. Reaction of sodium chlorite with various polysaccharides. Rate studies and aldehyde-group determinations, 1788.

- and Grenoble, M. E. Determination of poly-(methylhydrogensiloxane) in poly(dimethylsil-

oxane) fluids, 4836.

Laurell, C.-B. Determination of the haptoglobin group, 682.

Laurent, F., and Soleil, J. Colorimetric determination of quinicine, 5405.

Laurent, J. See Abramson, E., 1050.

Laursen, T. Fluorimetric method for measuring the activity in serum of the enzyme lactic dehydrogenase, 4441.

- and Espersen, G. Fluorimetric method for measuring the activity in serum of glutamic oxalacetic transaminase, 696.

Lausen, H. H. See Jensen-Holm, J., 1154. Lautenbach, A. F. See West, D. B., 2984. Lauw-Zecha, A. See De Vries, J. E., 3323. Laux, P. G., and Brown, E. A. Second Conference -Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Determination of microgram concentrations of zirconium in organic and aqueous solutions containing uranium, 335.

Lauzon, R. See Angell, C. L., 3818. Laviron, E. See Tirouflet, J., 4297. Lavrinova, E. N. See Gubel'bank, S. M., 882.

Lavruchina, A. K. Behaviour of elements in trace amounts, 344.

Lawrey, D. M. G., and Cerato, C. C. Determination of trace amounts of methane in air, 281.

Laws, E. Q. Determination of Phosdrin in vegetables, 290.

Lay, A. See Hennig, K., 5027.

Lazarev, A. I. Detection and determination of

rhenium, 517.

and Lazareva, V. I. Colorimetric determination of antimony in metallic molybdenum and molybdates, 92. Complexometric determination of zinc, lead and cadmium in brass and bronze, 905. Colorimetric determination of cadmium with Rhodamine B, 1684. Analysis of nickel electrolyte for boric acid by means of static ion-exchange chromatography, 3271.

Lazareva, V. I. See Lazarev, A. I., 92, 905, 1684,

Lazebnaya, G. V. See Kustas, V. L., 2106, 4183. Lazebnik, D. D., and Yatsenko, V. I. Spectrographic determination of tin in type metal, 431.

Lazer, L. S. See Baumgartner, W. E., 1495. Lazur'evskii, G. V. See Forostyan, Yu. N., 5040. Lbov, A. A., and Naumova, I. I. Activation analysis with 14-MeV neutrons, 1229.

Leach, A. A. Neuman and Logan method for the determination of hydroxyproline, 3905.

Leacock, C. T. See Griffing, M. E., 4866. Leaf, A. C. Determination of zirconium-95 plus niobium-95 by anion-exchange separation from other fission products, 4722.

Leahy, T., and Smith, R. Methaemoglobin determination, 4965.

Leake, L. R., and Reynolds, G. F. Polarography of

lead styphnate, 2309.

Leake, N. H. See King, J. S., jun., 3348.

Leandri, G., and Mangini, A. The near u.v. spectra of thionylamines, 1428

Leane, J. B., Richards, R. E., and Schaefer, T. P. High-resolution nuclear resonance apparatus, 846.

Lebbe, J. See Buzon, J., 1995. Lebedev, B. A. Cobaltinitrite method for the

determination of potassium in plant sap, 1468.

Lebedev, N. N. See Mikhallenko, Yu. Ya., 5295.

Lebedeva, N. P. Determination of wheat-grain proteins by paper partition chromatography, 2450.

Lebedeva, N. V. See Nazarenko, V. A., 2119.
 Le Berre, A., and Léger, J. Determination of sulphur in organic products by combustion in a

high-frequency furnace, 4864.

LeBlanc, R. B. Polarographic determination of NN'-ethylenediglycine and nitrilotriacetic acid in (ethylenedinitrilo) tetra-acetic acid, 2782. See also Daniel, R. L., 1072.

Lebreton, P. Errors in the determination by isotopic dilution, 4105.

Lecce, J. G., and Legates, J. E. Paper-electrophoretic whey-protein pattern of cows with acute mastitis,

Leclerc, E., and Beneden, G. van. Micro-determination of calcium in water, 4023. Leclerq, M. See Frèjacques, C., 2031.

Leddicotte, G. W., and Lyon, W. S. [Second Conference-Analytical Chemistry in Nuclear Reactor Technology. Part 2. Instrumentation, remote-control techniques and nucleonics. Gatlinburg, Sept. 29 to Oct 1, 1958.] Special radiochemical analysis in the operation of Oak Ridge National Laboratory reactors, 3103.

See also Blanchard, R. L., 1587, and Emery, J. F., 4158.

Lederer, M. See Grand-Clement, A., 3102.

Le Dizet, L. See Fleury, P., 2285. Le Duigou, Y. Colorimetric micro-determination of dimethylnitrosamine and dimethylhydrazine,

5287 See also Lamouroux, A., 5303.

Ledvinová, Z. See Knobloch, E., 2438.

Lee, E. H., and Oliver, G. D. Internal standards in

gas chromatography, 3048.

Lee, F. A. See Mattick, L. R., 3518.

Lee, P.-T., Chao, T.-H., and Lee, Y.-S. Polarographic determination of molybdenum in acid solutions, 2201.

Lee, T., Hallowell, A. L., and Rogers, L. H. Spectrographic determination of uranium-235.

Photographic recording and d.c. arc excitation, Lee, T.-C., Chao, S.-H., and Lu, T.-H. Determination

of non-metallic inclusions in low-chromium steel by chlorine methods, 139.

Lee, W., and Turnbull, J. H. Spectrophotometric estimation of phenol in solutions containing tyrosine, tryptophan, histidine or chymotrypsin,

Lee, Y.-S. See Lee, P.-T., 220 Lee, Y.-T. See Pan, K., 2080. See Lee, P.-T., 2201.

Leeb, A. J., and Hecht, F. Determination of copper in steel, ferrous alloys, aluminium, chromium, cobalt, manganese and nickel. Extraction process with 2:2'-diquinolyl, 376.

Leemann, H. G. See Mathies, L., 4448.

Lefebvre, B. See Pien, J., 3986. Lefebvre, M., Baret, C., and Pichat, L. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Study of methods of analysis of traces of aldehyde in vinyl chloride monomer by means of aldehyde labelled with

carbon-14, 2031. Lefevre, A. M., Lefevre, J. F., and Raggenbass, A. Radiochemical determination of caesium by the colorimetric determination of dipicrylamine, 4664.

Lefevre, J. F. See Lefevre, A. M., 4664. Leffler, H. H. Estimation of cholesterol in serum,

Lefort, M. Micro-analysis of gas, 5120. Legallais, V. See Machly, A. C., 832. Legates, J. E. See Lecce, J. G., 269.

Léger, J. Micro-determination of nitrogen in organic compounds, 3786.

See also Le Berre, A., 4864.

Légradi, L. Ion-exchange resin indicators, 4097. Legrand, C. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Quantitative control in X-ray fluorescence, 2031.

Legrand, M. See Pesez, M., 4296. Lehman, J. See Toepfer, E. W., 4502. Lehman, R. W. Vitamin A assay variation caused by particulate distribution of dry vitamin A in feed samples, 4530.

See also Ames, S. R., 4496, and Tinkler, F. H.,

Lehmann, H., and Dutz, H. Infra-red spectroscopy as a method for the determination of mineralogical constitution of ceramic raw materials and products, 3278.

Lehmann, J. See MacArthur, M. J., 1946. Lehner, H. Testing the purity of pharmaceutical

raw materials with the aid of micro-methods.

Leifheit, H. C., and Smith, E. R. B. Quantitative estimation of isonicotinic acid hydrazide [isoniazid] and 4-aminosalicylic acid in blood serum.

Leipunskaya, D. I., Gauer, Z. E., and Flerov, G. N. Neutron activation analysis of rocks and ore concentrates, 1385.

Leitch, L. C. See Angell, C. L., 3818. Leiter, L. See Rosenblum, R., 1503.

Leithäuser-Weitecki, G. See Birkofer, L., 3831.

Lejeune, R. See Duyckaerts, G., 3620

Lektorskaya, N. A., and Kovalenko, P. N. Polarographic determination of antimony and bismuth in zinc electrolytes, 1287. Polarographic determination of bismuth, antimony, lead and tin when present together, 2054. Electrode polarisation during polarographic determination of antimony, bismuth, lead and tin, 3128.

Leliaert, G., and Eeckhaut, J. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Chemical separation methods for calcium and strontium. Quantitative determina-tion of both elements in calcium-strontium mixtures by the isotopic dilution method, 2031. Lelièvre, P. Chemical method for the determination

of cysteamine in biological materials, 2895.

Leluc, R. See German, A., 3940. Lemieux, P. E., and Black, R. H. Direct-reading spectrochemical determination of fluorine in alumina, 4258.

Lemli, J. Determination of gitoxin, 3954.

Lench, A., and Martin, G. S. Vacuum fusion, gas extraction, and collection apparatus, 2575. Lenk, R. See Maly, J., 5239.

Lentz, C. F. See Featheringham, J. A., 2173, 2174, 2179, 2204.

2179, 2204.

Lenz, I. See Fijolka, P., 200, 1459.

Leon, M. See Campbell, W. J., 2567.

Leonard, G. W. See Ayres, W. M., 1840, and Pakulak, J. M., jun., 321.

Leonard, M. A. See Belcher, R., 3287.

Leonardi, G., and Mariani, E. [Fifteenth International Congress of Pure and Applied Chemistry, Liches 1976.] Lisbon, 1956.] Determination of germanium in some Italian coals, 2031.

Mariani, E., and Rumi, B. Determination of moisture in sucrose by means of a high-frequency method, 5427.

Leonov, V. N. See Sazonova, V. A., 2064. Leont'ev, V. M., and Fedotov, N. A. Automatic high-resistance polarography with a vibrating platinum electrode, 5515.

Leopold, H., and Valtr, Z. Determination of gluconic acid and citric acid. I. Determination of gluconic acid as a copper-gluconate complex, 2776; II. Determination of citric acid in the form of copper citrate, 2776; III. Analysis of important salts of gluconic and citric acids based on the formation of copper complexes, 2776.

Lerner, B. See Rapport, M. M., 4932. Lerner, M. Colour test for heroin [diamorphine],

4446

Lerner, M. W., See Eberle, A. R., 1310, 4154. LeRosen, H. D. Gas-chromatographic determination of n-pentane and lighter components in olefin-free naphthas using ethyl chloride as an internal standard, 4862.

Leslie, R. T., and Kuehner, E. C. [Review of fundamental developments in analysis.] Distillation analysis, 5125.

Leu, Y,-C. Colorimetric micro-determination of antimony in blood and urine with crystal violet,

Leuchtenberger, C. Quantitative determination of deoxyribonucleic acid in cells by Feulgen microspectrophotometry, 667.

Lev, I. E. Carbide analysis of white cast iron,

Levenson, G. I. P., and Rumens, M. G. Estimation of Phenidone [1-phenylpyrazolid-3-one] in used developers, 1101.

Leveque, P., Martinelli, P., and May, S. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Some examples of applications to chemical analysis of the y-ray scintillation spectrometer, 2031.

Levi, L., and Laughton, P. M. Determination of

citral in lemongrass oil and citrus oils by condensation with barbituric acid, 3846.

See also Chatten, L. G., 720, 1901, and Smith, D. M., 5091. Levi, M. C. See Danon, J., 4176.

Levikov, S. I., and Shishatskaya, L. P. Hydrogen and mercury - helium light sources for SF-4 spectrophotometers, 2560.

Levin, E. Somogyi method for the determination of amylase in biological materials, 2914.

Levin, É. S., and Burtseva, E. I. Photometric determination of 1-naphthylamine-4-sulphonic acid in technical 1-naphthol-4-sulphonic acid,

Levin, N. W. See Mendelsohn, D., 2354.

Levine, J., and Horrocks, E. Determination of pilocarpine, 5406.

and Roe, J. E. Determination of atropine and tropic acid, 2923.

Levitin, R. E., and Smirnova, V. I. Spectrographic determination of the phase content of aluminium in steel, 1360.

Levvy, G. A., and McAllan, A. N-Acetylation and estimation of hexosamines, 2386. Levy, E. See Glasner, A., 919.

Levy, H. R., and Talalay, P. Bacterial oxidation of steroids. II. Studies on the enzymic mechanism of ring-A dehydrogenation. Determination of

Δ-dehydrogenase activity, 1883.

evy, R. [International Symposium on Microchemistry. chemistry. Birmingham, 1958.] Use of the oxy-hydrogen blast burner in elementary organic analysis: micro-determination of halogens and sulphur in organic compounds, 3102.

Levy, S. See Biber, H. E., 309.

Lewandowski, A. Detection of cations on paper chromatograms, 3037. Concentration of ions for paper chromatography, 3038.

and Jarczewski, A. Estimation of small amounts of amines by means of cationite paper, 5285.

and Szczepaniak, W. Detection of fluorides on paper chromatograms by colour reactions, 2716. Lewbart, M. L. See Mattox, V. R., 2912.

Lewin, S. Developments in the physical chemistry laboratory. III. Chromatographic ovens, 810. Titration assay of amino acids. 1; II, 2890.

Lewis, J. C. See Snell, N. S., 3472. Lewis, J. N. See Beyer, W. W., 3103. Lewis, J. T. See Weeks, L. E., 1450, 4871.

Lewis, K. H. See McFarren, E. F., 1563. Lewis, L. See Sharp, R. F., 1480.

Lewis, L. L., and Melnick, L. M. Determination of calcium and magnesium with (ethylenedinitrilo)tetra-acetic acid. Studies in accuracy, 3642.

— and Straub, W. A. Determination of nickel and

cobalt in high-alloy and stainless steels, 3762.

Lewis, P. A. See Stone, L. R., 1967.

Lewis, W. H. P. Micro-method for the estimation of magnesium, 3862.

Lexmond, M. J. See Hooghwinkel, G. J. M., 1498. Lheureux, M., and Cornil, J. Spectrometric determination of silica in rocks, oil, plants and water,

Li. G. See Busev, A. I., 482, 5228. Liandier, L. See Godfrain, J. C., 2456.

Liani, A. Determination of "free" and "available" iron oxides in soils, 786.

Liao, C.-C. Ion-exchange separation and colorimetric determination of aluminium, 2091.

Libermann, D. See Freymann, M., 4367.

Liberti, A. See Cartoni, G. P., 4362. Libina, R. I. See Aleskovskii, V. B., 1698. Lichstein, H. C. See Twedt, R. M., 3933.

Lichtenberg, H. Determination of nitrite in food and tissues with a procaine - thymol coupling reaction, 84.

Lichtenfels, D. H. See Petrocelli, J. A., 3361. Lichtenstein, H., Beloian, A., and Reynolds, H. Comparative vitamin B₁₂ assay of foods of animal origin by Lactobacillus leichmannii and Ochromonas malhamensis, 3526.

Lichtenstein, N. See Kott, Y., 5369. Lidman-Safwat, S., and Theander, O. Determination of carbonyl groups in modified celluloses. comparison of the borohydride and copper number methods, 2332.

[International Symposium on Micro-Lieb, H. chemistry. Birmingham, 1958.] Forty years of quantitative organic micro-analysis, 3102

Liebhafsky, H. A., Winslow, E. H., and Pfeiffer, H. G. [Review of fundamental developments in analysis.] X-ray absorption and emission, 5125.

— See also Zemany, P. D., 3065. Liederman, D., Bowen, J. E., and Milner, O. I. Determination of arsenic in petroleum stocks and catalysts by evolution as arsine, 3359.

Liedtke, W. See Willmer, T.-K., 4274. Lien, O. G., jun. Determination of gluconolactone, galactonolactone and their free acids by the hydroxamate method, 1421.

Liepinya, Z. E. See Bankovskii, Yu. A., 3628

Lieser, K. H., and Schroeder, H. Extraction methods for the rapid separation and quantitative determination of small amounts of ferric and ferrous iron, 5244.

Lifshits, E. V., and Bugaeva, N. I. Spectrographic analysis of chromium for impurities, 2194.

Lightbourn, G. A. See Hilf, R., 2433, 3944. Likhodel, L. S., and Nosenko, N. I. Spectrographic determination of certain oxides in cement, 2249.

Likhosherstova, V. N. See Obtemperanskaya, S. I., 4316.

Lima, F. W., and Abrão, A. Separation of bismuth from lead with (ethylenedinitrilo) tetra-acetic acid

 [EDTA]. Application to radiochemistry, 4741.
 Lin, K. Y. See Marsters, R. W., 4981.
 Lincoln, A. J., and Davis, E. N. Quantitative determination of platinum in alumina-base reforming

catalyst by X-ray spectroscopy, 1384. Lincoln, K. A. Automatic recording electromagnetic

balance, 5482.

Lincoln, W. R. See Bryan, J. T., 1158.
Linday, E. M. See Potter, R. S., 4556.
Linde, H. W. Estimation of small amounts of fluoride in body fluids, 3397.

Linde, P. F. See Nyman, C. J., 4728. Lindemann, M. See Kleber, W., 4487. Lindgren, F. T. See Del Gatto, L., 1518.

Lindley, G. Apparatus for routine analysis. II. Fractionating pipette, 4555; III. Automatic measures, 4545; V. An improved gas flow meter,

Lindley, J. R. See Dwiggins, C. W., jun., 3066.
Lindner, K. De-salting of paper chromatograms
by cutting off the starting spots, 4051.

Lindsey, A. J. Spectrophotometric determination of

polycyclic hydrocarbons. II, 1813. Lindvall, S. See Eriksson, A. F. V., 3932.

Ling, L.-C. See Huang, M.-C., 1887. Lingane, J. J. Coulometric titration of bivalent copper with electrogenerated bivalent tin, 2069.

See also Bard, A. J., 511, 889, and Selim, R. G.,

3741

Link, W. E., Hickman, H. M., and Morrissette, R. A. Gas - liquid chromatography of fatty derivatives. II. Analysis of fatty alcohol mixtures by gas liquid chromatography, 1942.

Linn, R. A. See Williams, L. A., 208.

Linskens, H. F., and Schrauwen, J. A. M. Colour detection of peroxidase on electropherograms, 2415.

Linton, H. R., and Nixon, E. R. Infra-red spectra of methyl and silyl phosphines, 192.

Lipina, T. G. Chromatographic separation of microgram amounts of butyl and isooctyl alcohols, 3801

Lipińska, H. See Lipińska-Kostrowicka, H. Lipinska-Kostrowicka, H. See Kemula, W., 4129, 5154, 5255.

Lipiński, B. Spectrophotometric method of determining some anthracene derivatives in frangula bark (Rhamnus frangula L.), 3962.

Lipis, L. V. See Zaidel', A. N., 2132. Lipke, H., and Kearns, C. W. DDT-dehydrochlorin-I. Isolation, chemical properties, and ase. spectrophotometric assay, 1881.

Lipke, J. See Eger, C., 1051.

Lipowitz, J. See Arnett, E. M., 4656. Lippa, M. Z. de. Determination of manganese in steel, 3761.

Lippert, E., Nägele, W., Seibold-Blankenstein, I., Staiger, U., and Voss, W. Measurement of fluorescence spectra with spectrophotometers and comparison standards, 3069.

Lipscomb, H. S. See Guillemin, R., 692.Lipsett, F. R. Apparatus for automatic recording of absolute fluorescence spectra, 835.

Lipshits, B. M., and Smirnova, G. K. Quantitative drop method of determining germanium with phenylfluorone, 4707.

Lipton, S. H. See Sievert, H. W., 4440. Lishevskaya, M. O. See Nessonova, G. D., 1763. Lisitsyna, E. V. See Lysenko, V. I., 4165.

Lisk, D. J. Determination of small amounts of arsenic in potatoes. Extraction and reduction of molybdoarsenic acid, 5012. Determination of residues of chlorinated pesticides using a modified Schöniger method, 5055.

Lisowski, Z. See Trząski, M., 1118. Lissi, T. P. See Cuzzoni, M. T., 4473.

Lissitzky, S. See Miranda, F., 1605. Lister, R. E., and Pride, R. R. A. Characterisation of crystalline and amorphous aloin, 3477.

Liteanu, G., Crisan, I., and Calu, C. Rapid methods of analysis. III. Complexometric determination of aluminium and chromium, 1301.

Little, E. C. S. Method for determining carbon-14 combustion using calcium carbonate, 2111.

Little, J. J. See Mueller, J. I., 3103, and Scotti, V. G., 3103.

Littlewood, A. B. Katharometers in gas chromatography and the thermal conductivity of binary gas mixtures, 3561.

Littman, J. See Shoolery, J. N., 126.

Liu, C.-H. See Yu, C.-C., 4347. Liu, R. See Kallmann, S., 3651. Liu, S.-C. See Wang, S.-C., 3870.

Liu, T.-C. See Wang, S.-C., 3870. Liu, T.-C. See Lu, M.-L., 4221. Liu, Y.-S. See Yen, J.-Y., 2627. Livshits, D. M. See Belokrinitskaya, E. E., 1373. Livshits, E. G. See Výsotskii, R. Ya., 681. Lizarduy, M. L. Rexach-M. de. See Rexach-M. de Lizarduy, M. L.

Lizarduy, M. L.

Ljungqvist, K. J. See Samuelson, O., 3317.

Lloyd, A. G. Studies on sulphatases. XXVIII.

Preparation of substrates for the assay of glycosulphatase, 4443.

Lloyd, B. B. Gas-analysis apparatus for use in physiological analyses of respired air, 5485.

Lloyd, H., & Co., Ltd. Improvements in or relating to test tablets, 4404.

Lloyd, J. E. See Esso Research & Engng Co.,

Lobanova, E. F. See Bankovskii, Yu. A., 2595, 3138. Loboda, L. A. See Rodinov, V. M., 3914. Lock, L. C. See Anderson, J. R. A., 3686. Lockyer, R., and Hames, G. E. Quantitative determination of some noble metals by atomicabsorption spectroscopy, 353.

Lodge, J. P. See Barber, E. D., 3527, and Havlik. B. R., 3312.

Lodzik, S. A. See Bashkirov, A. N., 1410.

Loening, U. E. See Bassham, J. A., 3446. Lœuille, E. Chemical analysis. Automatic appara-

Loculle, E. Chemical analysis. Automatic appara-tus and procedures. Automation, 3105.

Locw, H. See Luther, H., 2855.

Logan, J. E. See Griffiths, B. W., 2941.

Logothetis, J., and Cohen, H. P. Constant-tempera-ture explosion-proof cabinet for development of two-dimensional chromatograms, 1993.

Lohman, F. H., Kuemmel, D. F., and Sallee, E. M. Determination of iron in phosphate and zir-

conium salts, 2225. **Lohmann, D.** Determination of amino acids in small samples of blood, 1132.

Lohr, L. J., and Kaier, R. J. Preparation of micro Nujol mulls for infra-red analysis, 4584.

Loisel, J. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Application of i.r. spectrography to the analysis of rust, 2031.

Lomi, C. See Costantinides, G., 2826. Lo Moro, A. See Bovalini, E., 1296, and Valentini, G., 1297.

See Bianchi, G., 714. Lomuto, E.

Lonati, R. D., and Tonolini, F. Alpha-radioactivity in the soil and in biological material by spectrum determination, 4526.

Long, A. W. See Erley, D. S., 4586.Long, C., and Staples, D. A. Determination of acetylneuraminic acid in crude brain lipids, 3445

Long, J. F. See Faley, R. L., 4567. Long, J. L., and Grill, L. F. Spectrophotometric method for uranium using tributyl phosphate and dibenzovlmethane, 976.

Long, L., jun. See Bissett, F., 3074.
Longehamps, J. See Scholler, R., 4975.
Longinotti, L. Chromatographic separation and

spectrophotometric determination of adenosine triphosphate and adenosine diphosphate from animal tissues, 1131.

Longuet, P. See Burglen, L., 3777. Loo, C.-W. See Huang, M.-C., 1887.

Looker, J. J. See Pappenhagen, J. M., 2492.

Lopez, E. See Alfonso, N., 4477. López, F. M. See Mateo López, F.

Lorás, V., and Leschbrandt, F. Determination of lignin in unbleached and bleached pulps, 621.

Lorch, L. von. See De Felip, G., 1894

Lord, S. S., jun. See Beukelman, T. E., 4577. Lorenz, F. See Machek, G., 3959. Lorenzelli, V., and Möller, K. D. Absorption spectra

of formic acid and its methyl ester in the infra-red region, 180.

Lörinez, F., and Szeredy, I. Quantitative and qualitative determination of connective-tissue content of meat and meat products, 2966.

Losa Martin, B. See Arribas Jimeno, S., 4786.

Losehbrandt, F. See Lorás, V., 621.

Losev, L. P. See Korol', A. N., 3583.

Losev, N. F. Quantitative X-ray spectrographic determination of platinum in ores, 1033.

Loseva, G. G. See Podchainova, V. N., 4126. Lotareva, V. I., and Chuiko, V. T. Concentration of traces of iron from solutions of nickel, cobalt and zinc salts by partial precipitation of the macro-

component, 524.

Lothringer, R. L. See Makens, R. F., 1056.

Lott, K. A. K. See Griffiths, T. R., 1621.

Lott. P. F., and Vite, R. K. Gravimetric determination of bismuth with dimethylglyoxime, 4737.

Louvrier, J., and Voinovitch, I. A. Volumetric determination of silica, 2661.

Love, D. L., and Greendale, A. E. Radiochemical analyses through polarographic methods. Rapid procedure for technetium and ruthenium radionuclides in fission products, 4264.

Loveland, J. W., Adams, R. W., King, H. H., jun., Nowak, F. A., and Cali, L. J. Spectrophotometric titration of parts per million of carbon dioxide in gases, 65.

See also Fabrizio, F. A., 3362.

Lovell, C. M., and White, H. F. Low-temperature infra-red cell, 2563.

Lovell, H. L. See Grendon, H. T., 4585. Lowrey, W. See Bouthilet, R. J., 1933. Loy, H. W., and Wright, W. W. Microbiological assay of amino acids, vitamins and antibiotics. Application of tube methods, 699.

See also Deutsch, M. J., 4498, 4501, and Mc-Guire, J. J., 4421.

Lu, M.-L., Liu, T.-C., Yen, I.-I., and King, W.-K. Application of trihydroxyfluorone derivatives for the colorimetric determination of tervalent antimony, 4221.

See Lee, T.-C., 139. Lu, T.-H.

Lucchesi, C. A. See Hirn, C. F., 1325, and Secrest, P. J., 3834.

Lucena-Conde, F., and Prat, L. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956. A new reagent for the colorimetric and spectrophotometric determination of phos-

phorus, arsenic and germanium, 2031. Ludowieg, J., and Dorfman, A. Micro-method for the colorimetric determination of N-acetyl groups in acid mucopolysaccharides, 4415.

Ludwig, B. J. See Hoffman, A. J., 3402. Ludwig, H., Potter, V. R., Heidelberger, C., and Verdier, C. H. de. Automatic direct quantitation radioactivity on paper chromatograms, 5083.

Ludwig, R. A. See Thorn, G. D., 4341.

Luft, B. D. See Vidro, G. I., 2002. Luft, K. F. See Gade, M., 1038.

Lugovoy, J. K. Prevention of cross-contamination in the dry-ash method for protein-bound iodine,

Luh, B. S., and Niketic, G. Flame-photometric determination of calcium, magnesium and potassium in canned tomatoes. 3506.

Luhby, A. L. See Cooperman, J. M., 3886.

Luis, P. Detection of barium and strontium in the insoluble sulphates, 43. Detection of sulphuric acid in insoluble sulphates, 100.

Łukasiak-Wardzińska, H., and Popowicz, J. Determination of iron¹¹¹ by using sodium 4-amino-

salicylate, 641.

Luke, C. L. Determination of sulphur in iron and steel, 1369. Photometric determination of antimony and thallium in lead, 2123. Photometric determination of tin in copper-base and lead-base alloys 2667

Lukeš, V., Komers, R., and Herout, V. Ground unglazed tile-a new support for gas-liquid

chromatography, 5494.

Lukin, A. M., and Bozhevol'nov, E. A. Reagent for the luminescence determination of gallium, 4164. Petrov, G. S., and Smirnova, K. A. Quantitative colorimetric determination of lead and zinc, 4710.

See also Bozhevol'nov, E. A., 3164.
 Luksha, E. A. See Bankovskii, Yu. A., 514, 3247.

3628.

Luk'yanov, V. F., and Knyazeva, E. M. Complexometric determination of zirconium, 4204. Spectrometric study of the reaction of zirconium with methylthymol blue, 4717

Savvin, S. B., and Nikol'skaya, I. V. Photometric determination of thorium in zircon by means of the new reagent Arsenazo III, 3197.

— See also Chernikhov, Yu. A., 440, 2680. Lulova, N. I. See Tarasov, A. I., 1997. Lumpkin, H. E., and Nicholson, D. E. Analyses of o-xylene oxidation products, 3814.

Luna, C. See Coulson, C. B., 5045.

Lundgren, F. See Danielsson, A., 306. Lundquist, F. Quantitative determined Quantitative determination of amino acids by combined displacement and paper chromatography, 1859. Lundstrom, F. O. See Clark, K. G., 1961.

Luongo, J. P. Continuous reference beam attenuator for infra-red spectrophotometry, 4583.

Lupu, C., and Stanercu, G. Infra-red spectrophotometric determination of isomers of hexachlorocyclohexane, 5479.

Luquin, E. Determination of the total hardness of water, 1952.

Lur'e, Yu. Yu., and Nikolaeva, Z. V. Determination of individual dihydric phenols in sewage waters and dilute solutions, 4029.

Lüscher, E. Light detectors for vacuum spectroscopy, 3058. Spectrographs and monochromators for vacuum spectroscopy, 3059.

Luscombe, M. See Cook, E. R., 3900.

Lushchik, Yu. N. Colorimetric method of determining nickel in cobalt - arsenic ores, 1764. Lusk, T. E. Spectrometer sample heater, 2553.

Luther, H. Quantitative infra-red measurements on poly(vinyl chloride) - plasticiser systems, 2855.

Lutokhina, N. V. See Babko, A. K., 3259. Lutomski, J. Determination of harman, harmine

and harmol in plant materials, 2926. Lux, H., Niedermaier, T., and Petz, K. "Threephase titration" as a new analytical aid, 3117.

Lux, R. See Rink, M., 1541. Luykx, M. J. M. M. See Jansen, H. E., 1928. Luzhnova, M. A. See Raikhbaum, Ya. D., 3275.

Lyadov, V. S. See Aleskovskii, V. B., 873. Lyalikov, Yu. S. See Novik, R. M., 510.

Lyast, I. Ts., and Vshivtsev, A. D. Apparatus for the determination of sulphur in petroleum products, 5315.

Lyle, S. J. Benzidine and its derivatives in analytical chemistry, 2036.

Lyman, C. M. See Baliga, B. P., 3537.
Lynch, G. See Szymanski, H., 3036.
Lynch, J. J. See Thomas, J. F. J., 4515.
Lyon, R. J. P., and Tuddenham, W. M. Infra-red determination of the kaolin-group minerals, 4799. Lyon, W. S. See Leddicotte, G. W., 3103. Lÿsenko, V. I., and Lisitsÿna, E. V. Separation of

gallium from other elements by the formation of an amalgam, 4165.

and Zelenina, T. P. Polarographic determination of lead and zinc in copper mattes, 931.

Lÿstsova, G. G. See Strel'nikova, N. P., 4240. Lysyj, I. Spectrophotometric method for the determination of chlorine in organic compounds. A semi-micro and micro-method, 3290.

- and Zarembo, J. E. Spectrophotometric method for the determination of small amounts of sulphur in organic compounds: a semi-micro and micromethod, 557.

- See also Zarembo, J. E., 2726.

Ma, T.S. [Progress in microchemistry.] Functionalgroup quantitative organic analysis, 2033. [International Symposium on Microchemistry. Birmingham, 1958. Micro-determination of functional groups, 3102. [Review of fundamental developments in analysis.] Organic microchemistry, 5125.

See also Gutterson, M., 3810, and Karten, B. S.,

3296.

Maass, A. R., Carey, P. L., and Heming, A. E. Spectrophotometric determination of 3-o-tolyloxy-1:2-propanediol [3-(2-methylphenoxy)propane-1:2-diol] (mephenesin) and its metabolite in plasma and urine, 1484.

Macagnino, G. See Antonaci, B. L., 2403.

Macak, J., and Kubes, J. Separation of the C, to alkylphenols with paper chromatography,

McAllan, A. See Levvy, G. A., 2386. McAllister, H. C., jun., and Yarbro, C. L. Rapid complexometric titration of serum calcium, 3864. MacArthur, M. J., and Lehmann, J. Chromato-

graphic separation and fluorimetric measurement of vitamin-Be components in aqueous solutions,

 See also Toepler, E. W., 4502.
 McBride, C. H., and Ziegler, W. A. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part 1. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Determination of small amounts of magnesium in uranium with the flame photometer, 335.

McBride, W. R. See Bens, E. M., 1442.

McCann, D. S., Burcar, P., and Boyle, A. J. Rubeanic acid [dithio-oxamide] for determination of

copper in human serum, 4898.

— See also Zdybek, G., 4812.

McCann, H. G. Determination of microgram quantities of magnesium in mineralised tissues, 3144.

McCarthy, T. E., and Paille, M. M. Determination of methionine in crude proteins, 4429.

McChesney, E. W., Shekosky, J. M., Eckert, H. W., and Koss, R. F. Colorimetric determination of dextrosulphenidol and raceophenidol, 3970.

McClaren, D. See Cross, A. H. J., 3463. McCluggage, W. C. See Power, W. H., 44. McCown, J. J. See Larsen, R. P., 3103.

McCoy, P. F. See Pearl, I. A., 4052.

McCracken, M. A. See Burd, R. M., 939. McCrone, W. C. Identification of high explosives by microscopic fusion methods, 3386.

McCurdy, W. H., jun., Vanden Heuvel, W. J. A., and Casazza, A. R. Quantitative separation of copper, cadmium and zinc by precipitation of sulphides with thioacetamide, 1254.

McCutchon, M. A., O'Connor, R. T., Dupre, E. F., Goldblatt, L. A., and Bickford, W. G. Ricinelaidic acid and methyl ricinelaidate; their preparation and determination by infra-red spectroscopy, 1577.

Macdonald, A., Pomeroy, J. S., and Gardner, M. H.

Determination of water in serum, 3857

Macdonald, A. M. G. Analysis for industry [titrimetric determination of iron and uranium], 135; [Unusual reagents in redox titrimetry], 1235; [Redox titrimetry], 1637; [Classical analytical chemistry], 2032; [Iodimetric and bromimetric methods for organic materials), 3104: [Determination of carbon and hydrogen in organic compounds], 3595; [Mercurimetric determination of chloride], 3596; [Determination of phosphorus by the molybdenum blue method], 4092: 4730.

Macdonald, F. J. Neutral reagent for the routine determination of fat in milk and milk products, 263. Neutral reagent for the routine determination of fat in separated milk and low-fat products.

McDonald, L. A. See Amphlett, C. B., 5147. Macdonald, R. E., and Waterbury, W. E. Colorimetric estimation of citric acid, 2281.

McDonel, E. T. See Shelton, J. R., 2517.
MacDongall, D. See Kane, P. F., 4534, and
Meagher, W. R., 1974.
MacDuffee, R. C. Electrical modifications of the

Baird flame photometer which simplify calibration and improve the accuracy of low potassium readings, 1619.

McDuffle, B., Bandi, W. R., and Melnick, L. M. Simultaneous spectrophotometric determination of niobium and tungsten. Application to complex alloy and stainless steels, 1335.

Macek, J. See Fiala, A., 4594. Macek, K. See Procházka, Ž., 3350.

McEwen, D. J., and De Vries, T. Polarography of uranium IV in non-complexing and complexing media. Amperometric determination of fluoride,

McFarren, E. F., Schantz, E. J., Campbell, J. E., and Lewis, K. H. Modified Jaffé test for determination of paralytic shellfish poison, 1563.

McGeary, R. K. See Elbling, P., 937.
McGinn, C. J. See Spencer, C. C., 3803.
McGlotten, J. See Kabasakalian, P., 693.
McGowan, G. E. Determination of fluorine in coal.

Adaptation of spectrophotometric methods, 5317.

McGuckin, W. F. See Decker, B., 1489.

McGuire, D. See Arnett, E. M., 4656.

McGuire, J. J., Schiaffino, S. S., and Loy, H. W.

Turbidimetric and titrimetric methods for the microbiological determination of amino acids: a unification of materials, 4421.

Machaczka-Janikowa, J. Potentiometric chromatography as a method for detection of trace amounts

of silver ions, 2629.

McHard, J. A. See Smith, A. L., 1075.

Machata, G. Identification of antihistamines in post-mortem organs, 3971. Thin-layer chromato-

graphy in toxicology, 3976.
and **Neuninger**, **H**. Method for the identification of metallic poisons, 2959. Methods of lead determination in urine, 4402.

Machek. G. Colorimetric determination of sulphonamides in the presence of procaine penicillin, 5420.

and Brunner, R. Determination of inactivated procaine penicillin in premixes for feeding-stuffs

and prepared feeds, 3538.

- and Lorenz, F. Determination of vitamin B₁₂ in the presence of intrinsic factor, 3959.

Machlan, L. A., Hague, J. L., and Meros, E. J.
Determination of aluminium in precipitationhardening stainless steel and high-temperature alloys, 4278.

McInnes, A. G., Tattrie, N. H., and Kates, M. Application of gas-liquid partition chromatography to the quantitative determination of

monoglycerides, 4009.

McIntosh, J. J., and Cox, J. E. Colorimetric determination of boron in porcelain enamel frits, 5170. Mack, P. A. See Strickland, R. D., 1511, 4433, 4953.

McKannan, E. C. See Symons, N. K. J., 3379.

Mackay, C. F. See Wolfgang, R., 1228.

Mackay, K. J. H., and Thorne, R. P. Application of X-ray fluorescence methods to the in-line determination of uranium and plutonium concentrations, 5237.

McKenna, T. A., jun., and Idleman, J. A. Gaschromatographic analysis of hydrocarbon streams from butane hydrogenation, 566. Separation of C4 and lighter hydrocarbons by gas - liquid

chromatography, 3298.

McKenzie, B. F. See Decker, B., 1489.

MacKenzie, M. A. See Jones, R. N., 4299.

McKeown, G. G. See Przybylski, W., 5436.

McKinley, G. See Ducey, J., 105.

McKinley, W. P., and Graham, S. I. Identification

of pesticide residues in extracts of fruit, vegetables and animal fats. II. Rapid qualitative chemical tests for captan and methoxychlor, 4533.

- and Mahon, J. H. Identification of pesticide residues in extracts of fruits, vegetables and animal fats. I. Chromatography, 3020.

McKinney, O. F. See Burleigh, J. E., 2340. Macklin, M.-O. Instrument for the cor Instrument for the continuous measurement of dissolved oxygen in water, 2584.

Macků, J., and Stránský, Z. Direct oscilloscopic evaluation of electropherograms with simultaneous integration, 5121.

McLafferty, F. W. Mass-spectrometric analysis. Rearrangements in vinyl derivatives, 2772. and Gohlke, R. S. Mass-spectrometric analysis.

Aromatic acids and esters, 3335.

Maclagan, N. F. See Tombs, M. P., 2396.
McLane, J. E. See Papadopoulos, N. M., 4961.
Maclaren, J. A. Estimation of basic groups in wool by dye-uptake measurements, 4884.

McLaren, K. G. Determination of magnesium in nodular cast iron using a chromatographic

separation, 1753.

MacLennan, A. P., Randall, H. M., and Smith, D. W. Detection and identification of deoxy sugars on

paper chromatograms, 3412.

Macleod, N. Precision temperature control of spectrophotometer cells. A comparison of water circulation and electrical systems for the Unicam SP.-500, 5107.

SP-300, 5107.

McMillan, G. C. See Weigensberg, B. I., 687.

McMullen, W. H. See Missan, S. R., 3948.

McNabb, W. M. See Swann, W. B., 3655, and Warren, R. J., 2170.

McNerny, C. F. See Fauth, M. I., 3156.

McOmie, J. F. W. See Pollard, F. J., 348.

McPherson, R. T. See Fernandez, J. E., 4333.

McRae, J. P. See Van Gheluwe, J. E. A., 2987.

Macri, I. See Ivaldi, G., 2885.

McRoberts, L. H. Determination of thiamine in enriched cereal and bakery products, 4499.

MacWilliam, I. C. See Harris, G., 5440.

McWilliam, I. G. Detectors for gas chromatography,

Maddams, W. F. See Philpotts, A. R., 3102.

Maddox, W. L., and Kelley, M. T. Gamma absorptiometer for laboratory analysis of the heavy elements, 4624.

Maddy, A. H. Detection of 2; 4-dinitrophenylamino

acids on paper chromatograms, 2893.

Mader, W. J. See Haycock, R. P., 1891, 1968.

Madiwale, M. S. See Anantanarayanan, K. G., 2947.

Mádlo, Z., and Peizker, Z. Spectrophotometric determination of dithiocarboxyaminocarboxylic acids, 1142.

Madorsky, I. See Wood, L. A., 4387.

Maeck, W. J., Booman, G. L., Elliott, M. C., and
Rein, J. E. Spectrophotometric extraction

methods specific for uranium, 977.

Maehly, A. C., and Legallais, V. Apparatus for spectrophotometric micro-titration. to the titration of deuterohaemin, 832.

See also Bonnichsen, R., 4405. Maevskaya, A. N. See Sapozhnikov, D. I., 3419. Magee, R. J., and Scott, I. A. P. Separation and determination of aluminium, gallium, indium and

thallium by partition chromatography, 3670.

Scott, I. A. P., and Wilson, C. L. Polarographic behaviour of technetium and rhenium, 2222. See also Forsythe, J. H. W., 4289, Given, T., 3612, and Jasim, F., 4776.

Magee, W. L., Baker, R. W. R., and Thompson, R. H. S. Identification and quantitative estimation of ethanolamine and serine in lipid hydrolysates, 4952.

Mageru, V., Gabe, I., and Blanariu, D. Chemical and radiochemical analysis of radioactive atmos-

pheric dusts, 4512.

Maggi, A. See Dettori, A. G., 2364. Maggiorelli, E. Spectrophotometric determination of p-camphor-10-sulphonic acid, 610. Detection and spectrophotometric determination of the phenyl ester of methylcarbamic acid, 1437.

and Conti. L. Detection and spectrophotometric determination of Novalgin [sodium noramido-pyrine methanesulphonate] by means of the sodium salt of 1:2-naphthaquinone-4-sulphonic acid, 5004.

Magidman, P. See Herb, S. F., 5028. Magidson, I. A. See Kravchenko, V. S., 3297. Magliocca, T. S. See Williams, J. P., 1688.

Mahajan, L. M. See Athavale, V. T., 2714, 3234.

Mahal, H. S. Determination of blood alcohol by diffusion oxidation in high vacuum, 2872.

Mahon, J. H. See McKinley, W. P., 3020.

Mahon, M. E. See Payza, A. N., 1129, 3894.

Mahoney, G. B. See Clayton, M. M., 1500.

Mahr, C., and Seeger, B. Titrimetric methods by means of redox-shift. I. Volumetric determina-

tion of copper with ferrous sulphate, 3136.

Mai. L. A. Tungstenometric method for the determination of uric acid in urine, 3892.

Maier, L. See Prey, V., 3498.

Maier, R. H. See Bullock, J. S., 396.

Maihak, H., Akt.-Ges. Improvements in gas analysis, particularly the regeneration of spent caustic alkali from carbon dioxide gas-analysis apparatus, 3545.

Mains, E. A. See Roux, D. G., 3854. Mairanovskii, S. G., and Titov, F. S. Glass parts of

polarographic apparatus, 4602.

Maire. J. C. Determination of benzene by the method of Hofmann and Höchtlen, 5293.

Maiss, N. See Auterhoff, H., 2430.

Maisterra, J. H. See Herrero Maisterra, J. Majchrzak, K. See Korpak, W., 2787.
Majer, J. See Šaršúnová, M., 2960, 44 4467, and

Tölgyessy, J., 2958.

Majer, P. See Stankoviansky, S., 4675.

Majerová, M. See Klumpar, J., 2026.

Majumdar, A. K., and Bag, S. P. Spectrophotomatric determination of the support of the metric determination of iron with quinolinic acid, 2725

and Chakrabartty, M. M. Spectrophotometric determination of palladium. III. A comparative study of 2-mercaptobenzothiazole and 2-mercaptobenzimidazole as analytical reagents, Amperometric estimation of palladium, 158.

- and Mitra, B. K. High-frequency titration and estimation of ions. II. Determination of barium, lead, thallium, calcium, cerium, copper

and silver, 1253.

- and Mukherjee, A. K. High-frequency titration and estimation of ions. I. Determination of silver, 887. Direct estimation of niobium by N-benzoyl-N-phenylhydroxylamine, 2171. Separation of niobium and tantalum with phenylarsonic acid, 2696. Separation of niobium and tantalum from zirconium with salicylhydroxamic acid,

3713.

and Savariar, C. P. o-Carboxyphenylazo-1: 8dihydroxynaphthalene-3:6-disulphonic acid (so-dium salt) as an analytical reagent, 340. Spectrophotometric determination of copper with tiron, 1269. Spectrophotometric determination of iron with 3-hydroxy-2-naphthoic acid, 1350. Tiron as a spectrophotometric reagent for the estimation of osmium, 1767. Spectrophotometric determination of titanium with 2:3:7-trihydroxy-9-methyl-6-fluorone, 3694. Spectrophotometric determination of molybdenum with 2:3:7trihydroxy-9-methyl-6-fluorone, 4242. o-Carboxyphenylazochromotropic acid (sodium salt) as an analytical reagent. I. Chelatometric titration of thorium, zirconium and iron, 5203; II. Spectro-photometric determination of thorium and aluminium, 5203.

and Sen Gupta, J. G. Spectrophotometric determination of osmium, platinum and ruthenium, 1383. Spectrophotometric determination of osmium. I. Anthranilic acid as a reagent, 1031; II. Sulphanilic acid as a reagent, 2244; III. 2-Aminophenol-p-sulphonic acid as a reagent,

Majumder, S. K. See Krishnamurthy, K., 2508.

Makarov, B. N. Determination of carbon dioxide and oxygen in soil air, 1188.

Makarov, E. S. See Kuznetsov, L. M., 2127. Makens, R. F., Lothringer, R. L., and Donia, R. A. Micro-determination of methoxyl and ethoxyl,

Maksai, L. I. See Krasil'nikov, L. N., 411.

Maksimov, É. I. See Glebovskaya, E. A., 2260.

Maksimycheva, Z. T., and Khakimova, V. Volumetric determination of fluorine in tetrafluoroborates, 2216.

Makus, Z. See Kaufmann, H. P., 2479, 5035.
Malá, D. See Melichar, B., 2443.
Malachevskaya, F. L. See Finkel'shtein, A. I.,

Malakhova, S. I. See Shafershtein, I. Ya., 452. Malin, L. Determination of fatty acid composition by gas chromatography and u.v. spectrophotometric methods, 1575.

Malinina, R. D. See Yakovlev, P. Ya., 2243.

Malinina, V. I. See Kudymov, B. Ya., 1186. Malinowski, J. Indirect methods in flame photometry, 11. Determination of tributyl phosphate in Mepasin [kerosine] by flame photometry, 4343

Malissa, H. [International Symposium on Microchemistry. Birmingham, 1958.] Rapid determination of small amounts of carbon and sulphur in inorganic and organic substances by means of conductivity measurements, 3102. elementary analysis, 3779.

and Gomišček, S. Extraction of metal carbamates from strong acid solutions, 2611.

Malkina, L. A. See Shat'ko, P. P., 948.

Malkina, Z., and Horáček, J. Complexometric determination of propyl gallate, 5025.

Mallack, J. C. See Wiseman, H. G., 4528.

Mallett, M. W. See Hansen, W. R., 936.

Malli, J., Wood, G., and Friedel, R. A. Application to mass spectrometry of automatic manometer for batchwise gas sampling, 1231.

Mallik, A. K., Mitra, S. N., and Mathew, T. V. Cold process of saponification and its advantages,

See also Mitra, S. N., 3501.

Malmstadt, H. V., and Chambers, W. E. Precision null-point atomic absorption spectrochemical

analysis, 4588.

and Hadjiioannou, T. P. Determination of copper and zinc in metallurgical products by automatic derivative spectrophotometric titrations, 1270. Titration method for determination of calcium and magnesium in plant material with EDTA titrant, 1472.

and Hicks, G. P. Determination of glucose in blood serum by a new rapid and specific automatic system, 4916. Rapid injection and auto-

matic refill pipette, 5064.

and Winefordner, J. D. Determination of chloride in blood serum, plasma or other biological fluids, 1114. Determination of chloride by precision null-point potentiometry, 1953. Decomposition and analysis procedure for micro-determination of chlorine compounds in petroleum fractions, 4369.

Malowan, L. S. See Owens, T. P., 2946.
Mal'tsev, V. F., and Novak, V. P. Amperometric determination of fluorine in etching baths,

Malý, J., Kurzweilová, H., Lenk, R., and Peka, I. Study of actinides. I. Determination of the content of americium-241 in plutonium by spectroscopy of a- and y-radiation, 5239.

Malyutina, T. M., Dobkina, B. M., and Chernikhov, Yu. A. Determination of rhenium by a differ-

ential spectrometric method, 4778.

Manaresi, P. See Bua, E., 2756, 3380. Mancini, M. Micro-method for determination of cholesterol and iron in whole blood, 3448.

Mancy, K. H., and Okun, D. A. Automatic recording of dissolved oxygen in aqueous systems containing surface-active agents, 4022.

Mandel, P. See Bieth, R., 2900.

Mandel, R. H. See Margolis, D., 674.

Mandeles, S. Diethylaminoethylcellulose in the separation of proteins from egg-white and other biological materials, 4958.

Mandirola, O. B. de. See Brieux de Mandirola, O. Mandl, M., Kaše, M., Freiwillig, R., and Dostál, J. Isolation and identification of non-metallic inclusions with the method of direct chlorination,

See also Kaše, M., 4788.

Mandl, R. H. Bromocresol purple as an aid in the location of amino acids on descending paper chromatograms, 668,

Manecke, H., and Brokopf, W. Direct-recording spectrographs in the steel-works laboratory. VI,

Manfredi, G. Determination of neuraminic acid in

human red blood corpuscles, 5385. [Symposium on catecholamines.] Manger, W. M. Suitability of the ethylenediamine method of Weil-Malherbe and Bone and modifications for quantitating plasma pressor amines, 4938.

Mangini, A. See Leandri, G., 1428.
Mangio, F. Genuineness of edible oils by fractiona-

tion of the glycerides, 5030.

Mangold, H. K. Analysis of lipids by means of radioactive reagents, 2993.

Gellerman, J. L., and Schlenk, H. P. Chromatography of lipids, 1127.
Mankad, N. V. See Mehta, C. R., 4465.
Mankel, G. See Kaufmann, H. P., 1935, 2483.
Mankotia, M. S. See Singh, B., 4781.

Mann, C. K. Cation-exchange elution of magnesium ions by hydrochloric and perchloric acids, 3641.
anni, C. See Giovanella, B., 2948. Manni, C.

Manning, D. L. See Ball, R. G., 907, Goldstein, G.,

4723, and Menis, O., 335.

Manning, R. E. See Cannon, M. R., 5071

Manno, R. P., Paraskevopoulos, N., and Matsuguma, H. J. Compensation technique in infra-red spectrophotometry, 312. See Biedebach, F., 3964. Manns, G.

Mano, E. B. Colour reaction for methacrylate monomer and polymer identification, 4389.

Manousek, O. See Konupčík, M., 4464. Manoussakis, G. See Vassiliades, C., 4782. Mansford, K. R. L., Jones, A., and Burns, S. M. Assay of L-phenylalanine in casein hydrolysates, 3434.

Manso, L. See Forjaz, A., 2031.
Mantellassi, G. See Panconesi, E., 823.
Mäntescu, C. See Bädänoiu, M., 4700.
Mäpper, D. See Smales, A. A., 2031.
Mapstone, G. E., and Keppie, A. T. Determination

of tar acids and tar bases in light coal-tar distillates, 3366.

Mara, M. See Palous, R., 3627.
 Marais, P. G., and Smit, W. B. de V. Neutron moisture meter: circuit diagram and operation,

Maranowski, N. C. See Kearns, G. L., 2322.
Marchenko, P. V. See Babko, A. K., 2138.
Marcinkiewicz, S., and Green, J. Complete analysis of tocopherol mixtures. II. Separation of nitrosotocopherols by paper chromatography and their determination, 279.

— See also Green, J., 279.

Marcinkowska, K. See Ellert, H., 5399.

Marciszewski, H. Polarographic determination of derivatives of 5-nitrofuran. I. Determination of 5-nitro-2-furfuraldehyde semicarbazone in pharmaceutical preparations, 2951; II. Determination of 1-(5-nitrofurfurylideneamino)hydantoin (nitrofurantoin) in drugs and urine, 5418. Determination of methyl 1-methylbutylidene-

cyanoacetate by polarography, 4828.

Marcó, A., Scott, J. C., Elwood, J. C., and Van Bruggen, J. T. Radio-assay of aqueous solutions,

Marconi's Wireless Telegraph Co., Ltd. Frequency spectrum analysers, 2003.

Marcuse, R., and Knutsen, K. Volumetric determination of the oxidative stability of salted herring, 732.

Marcy, V. M. See Platte, J. A., 901.

Marczenko, Z., and Skorko-Trybuła, Z. Determination of potassium chlorate and potassium dichromate in the mass used for match produc-

tion, 4800.

4936

and Stepien, A. Concentration and colorimetric determination of titanium, aluminium, iron and magnesium in rock-salt, 5142. See also Kotarski, A., 5223.

Mardon, P. G. See Pearce, J. H., 3582.

Marek, Z. See Dufek, V., 2710, and Kabrt, L., 5195.

Mareš, E. Determination of monoglycerides in the process of transesterification of fats by glycerol, 5029.

Maresh, C. See Sundberg, O. E., 4303.

Margolin, L. S. See Sergeev, E. A., 3274.

Margolis, D., and Mandel, R. H. Separation of sulphur and non-sulphur amino compounds by two-dimensional paper chromatography, 674.

Margolis, E. I., and Shevkoplyas, A. G. Micro-

determination of carbon, hydrogen and nitrogen in nitro compounds, 4306.

Margoshes, M., and Scribner, B. F. Plasma jet as a spectroscopic source, 307.
See also **Thiers, R. E.,** 1215.

Margotte-Boy, G., Henry, R., and Issartel, R. Determination of urinary hexosamine, 3423.

Margraf, H. W. See Hawker, C. D., 3888 Margulies, S. I. See Nachlas, M. M., 4442. Marbold, J. See Kratochvil, V., 3822.

Mari, A., Talarico, M., and Scarano, E. Apparatus for determination of ammonia by micro-diffusion,

Mariani, E. See Leonardi, G., 2031, 5427 Marier, J. R., and Boulet, M. Turk Turbidimetric micro-determination of magnesium in milk, 1564. Direct analysis of lactose in milk and serum, 2457

Marignan, R. See Canals, E., 2031.

Marinetti, G. V., and Stotz, E. Direct chromatography of serum lipids without solvent extraction,

Marini-Bettolo, G. B. See Paoloni, L., 2031. Marinković, M. D. Spectrochemical determination of thorium by d.c. arc. 942

Marion, F. Determination of a mixture of cementite, carbon, iron and iron oxides. Analysis of ferro-cokes, 4787.

and Aubry, J. Determination of iron in its three states. Application to the complete analysis of iron sponge and to the determination of metallic iron in slags, 2729.

Marko, A. M., and Reynolds, F. B. Colorimetric method for measuring indican in urine, 4923.

Markov, G. G. See Tsanev, R. G., 3921.

Markov, M. A. See Kondrat'ev, D. A., 3355.

Markova, L. V. See Babko, A. K., 3215.

Markovits, I. See Erdey, L., 4783.

Marks, B. H. See Keenan, R. W., 4931.

Markunas, P. C. See Cundiff, R. H., 868, 1250, and Robinson, W. T., jun., 4324.

Markus, L., and Kayser, A. Assay of ε-caprolactam,

4390

Marley, J. F. See Cooperman, J. M., 3886. Maros, L., and Schulek, E. Analysis of 1:2glycols and polyhydric compounds. I. Indirect iodimetric determination of ethanediol, glycerol or mannitol by means of the formaldehyde formed by oxidation with periodate, 1786; III. Direct iodimetric determination of glucose by means of the aldehyde formed during oxidation with periodic acid, 3307; IV. Direct iodimetric determination of fructose through the aldehyde formed on periodic acid oxidation, 5275.

Maros, L. See also Schulek, E., 576, 2271.
Marotz, R. See Graue, G., 1755.
Marples, E. A., and Thompson, R. H. S. Determination and distribution of phospholipase B in mammalian tissues, 3934.

Marrama, P. See Rancati, G., 2915.
Marras, G., and Farina, E. Influence of some amino acids on the electrophoretic behaviour of local anaesthetics, 3967.

Marsani, Z. M. See Paladini, A. C., 213. Marsden, K. Determination of traces of cyanide in fish tissue, 3503.

Marsh, M. M. See Taylor, I. E., 2891.

Marshall, A. C. See Korzenovsky, M., 5391.

Marshall, H. S. B. See Kendall, R. P., 3041.

Marshall, L. M. See Barber, E. D., 3527, and Haylik, B. R., 3312.

Marshivar, A. See Andreev, A. S. 3161.

Marshikova, A. See Andreev, A. S., 3161. Marsters, R. W., Kinney, T. D., and Lin, Micro-determination of plasma amylase, 4981.

Martin, A. J., and Deveraux, H. Electrical ignition in the Schöniger oxygen flask method, 2745. and Edwards, K. L. Linear voltage temperature

furnace for thermal analyses, 320.

Martin, Albert Edward. See Parsons, Sir Howard

Grubb, & Co., Ltd., 2000.

Martin, Albert Edwin, and Reilley, C. N. (Ethylenedinitrilo)tetra-acetic acid titration of metal ions. Polarised mercury electrodes, 326.

Martin, B. L. See Losa Martin, B.
Martin, D. See Gutiérrez Amo, P. A., 750.
Martin, E. C. Chromatographic separation of some alkali metals, 4117. Bismuth nitrate spots in inorganic paper chromatography, 4739.

Martin, E. G., and Stat, M. R. Correlations between malt analytical data and brewing factors,

2981. Martin, F., and Floret, A. Combustion of a wide range of samples of organic substances. Determination of fluorine, chlorine, bromine, iodine,

sulphur and boron, 559. Chloromethylphenoxyacetic - and Pallière, M. Chromatographic separation of isomers

and related acids, 5052.

Martin, G. S. See Lench, A., 2575. Martin, J. T. See Richmond, D. V., 1969.

Martin, J. V. See Everest, D. A., 79.

Martin, P. E. See Jurinak, J. J., 5049.

Martin, R. L. Gas-chromatographic analysis of olefinic naphthas in the three- to six-carbon range with the aid of a subtraction technique, 4863.

- and Winters, J. C. Composition of crude oil through seven carbons as determined by gas chromatography, 3356.

See also Gregor, I. K., 2183, and Powers, G. W.,

jun., 1821.

Martin, S. B. Gas chromatography. Application to the study of rapid degradative reactions in solids, 813.

Martinelli, P. See Leveque, P., 2031.
Martinenghi, G. B. Variation with refining of the characteristics of olive oil. II. Iodine value of the unsaponifiable matter, 5033.

Martinez, F. B. See Bermejo Martinez, F. Martirani, I. See Höxter, G., 3409. Martti, R. See Hirsjärvi, V. P., 3236.

Martinova, L. A. See Filippova, N. A., 5224.

Maruta, S., and Iwama, F. Identification and determination of alcohols in solution with

vanadium oxinate as colour reagent, 4325. Maruyama, M., and Seno, S. Analysis of organic compounds by flame spectrometry. I. Determination of chlorine in organic compounds by band spectra of cuprous chloride, 1404.

Marvillet, L., and Tranchant, J. Analysis of explosives in non-aqueous media. Determination of potassium salts, 5336. Determination of butyl phthalate in nitrocellulose granules, 5337.

Marx, H. Paper-chromatographic determination of p-hydroxybenzoic acid esters, 601.

Marx, W. See Spolter, L., 4930.

Marzadro, M. Micro-determination of carbon and hydrogen in organic substances containing phosphorus, sulphur or halogens, 1400.

— See also Busellu, M. A., 1399.

Mashima, M. Chemical analysis with organic reagents. VI. Colorimetric determination of cobalt with NN'-ethylenedi-(4-methoxy-1:2-benzoquinone-1-oxime-2-imine), 4285; VII. Application of the colorimetric determination of cobalt with NN'-ethylenedi-(4-methoxy-1:2-benzoquinone-1-oxime-2-imine) 4285; VIII. Colorimetric determination of ferrous iron with NN'ethylenedi - (4 - methoxy - 1 : 2 -benzoquinone - 1 - oxime-2-imine), 4285; IX. Colorimetric determination of palladium with NN'-ethylenedi-(4-methoxy-1:2-benzoquinone-1-oxime-2-imine), 4285; X. Volumetric determination of zinc with 2-hydroxy-1-naphthaldoxime, 4145.

Maslennikov, A. S. Determination of cyclohexanone and cyclohexanol in aqueous solutions, 604.

Maslennikov, B. M., and Romanova, L. V. Semiquantitative spectrographic determination of lithium in ores and minerals, 361.

Maslinikova, V. I. See Brudz', V. G., 3169.

Maslowski, P. High-voltage electro-chromato-

graphic method for amino acids, 2892.

Mason, L. H., Dutton, H. J., and Bair, L. R. Ionisation chamber for high-temperature gas chromatography, 814.

Massart, R., and Missa, L. Determination of gases dissolved in water and vapours by gas-phase chromatography, 4513.

Schutz, M., and Hissel, J. Micro-determination of dissolved oxygen in boiler waters by constantcurrent coulometry. II. Description of micro-analyser for oxygen, 1959.

Massey, A. G. See Crighton, J., 4837.

Massey, V. Micro-estimation of succinate and the extinction coefficient of cytochrome c, 212.

Massicot, J. Paper chromatography of alkaloids derived from piperidine, 5401.

Masson, C. R. Slide-rule for converting percentages

to mole fractions, 291.

Masson, M. See Mouton, M., 723.

Master, I. See Sass, S., 4342.

Mastner, J., Franěk, F., and Novák, L. Quantitative evaluation of paper chromatograms and electropherograms without elution. II. Construction of a densitometer, 3042.

See also Franěk, F., 2526.

Masuda, K. See Ishibashi, Masayoshi, 2108.

Masuda, Y. See Momose, T., 354.

Masui, J. See Momose, T., 651.

Matano, N. See Yanagihara, T., 46, 4195.

Mate, M. See Kraljić, I., 2031.

Matei, I., and Cacea, E. Condensation product of

benzoin and p-aminophenol, reagent for the quantitative determination of copper, 4665.

Matelli, G., and Monti, L. Spectrophotometric determination of titanium in aluminium and its alloys by the hydrogen peroxide method, 3188.

Mateo López, F. Analytical applications of organoselenium compounds. A study of chlorophenoselenazine, 4095.

Mather, W. B., jun., and Anson, F. C. Coulometric - acidimetric titrations in anhydrous media, 3585. Matherny, M. See Krivan, M., 3774.

S. N., 3501.

Mathias, A. P. See Crook, E. M., 4445.

Mathien, V., Lacomble, M., and Charlet, L. Experience with direct-recording spectrographs in the steel-works laboratory. IV, 1755.

Mathies, L., and Leemann, H. G. Quantitative

spectrophotometric determination of apoatropine in presence of atropine, 4448.

Mathur, A. P. See Lal, J. B., 4877. Mathur, S. K. See Verma, M. R., 958. Matorin, Yu. V. See Vidro, G. I., 2002.

Matoušek, S. Ionisation detector for gas chromato-

graphy, 4060.

Matrka, M. Oxidimetric determination of dyes, 4379. Volumetric determination of 1-naphthol with sodium nitrite, 4855.

- Navrátil, F., and Fišar, C. Polarographic study of hydroxytriphenylmethane dyes, 4881.

- Navrátil, F., and Smetana, B. Gravimetric determination of anthraquinonesulphonic acids

with benzidine, 2812.

and Ságner, Z. Potentiometric titration of aromatic diamines with nitrite, 1436. Visual indication of reductimetric titrations with vanadium^{II} sulphate, 2601. Amperometric titration of anthraquinonesulphonic acids with benzidine solution, 2813.

See also Gasparič, J., 1453, and Kratochvil, V.,

3822.

Matsudaira, J., and Muroi, K. Quantitative determination of water in samples containing substances that react with the Karl Fischer reagent, 3844

Matsuguma, H. J. See Manno, R. P., 312.

Matsumae, T. Quantitative analysis of indium. I. Volumetric determination by the use of 8-hydroxyquinoline, 413; II. Gravimetric and volumetric determination of indium with 8hydroxyquinaldine, 413; III. Spectrophotometric determination of indium with arsenazo. 413.

- See also Shibata, Shozo, 1692.

Matsumura, Y. See Sato, Koichi, 2333.

Matsunaga, A., Murakami, A., Satō, I., Yamashita,
K., Yoshimori, H., and Shinagawa, K. Qualitative analysis of seventeen organic phosphorus pesticides by paper chromatography, 4035.

See also Sera, K., 4034. Matsuno, N., Nishihara, A., and Isobe, S. Determination of amino acids. II. Effect of time of hydrolysis of protein on the determination of

amino acids, 5368.

Matsushita, H. See Fujita, F., 2348. Matsuyama, G. Standardisation of mercuryII chloride solution, 4635.

— See also Schluter, E. C., jun., 4865.

Mattenheimer, H., and Borner, K. Polyethylene micro-pipettes (0.4 to 10 microlitres), 2511.

Matterson, L. D. See Pudelkiewicz, W. J., 4410.

Matthews, J. S., and Coggeshall, N. O. Concentration of impurities from organic compounds by progressive freezing, 166.

and Patchan, J. F. Automatic titration of peroxides in petroleum products, 193.

Matthias, W. Combined paper-electrophoretic and -chromatographic method for the determination of amino acids, 1502.

Mattice, J. J. See Bonhorst, C. W., 3396.
Mattick, L. R., and Lee, F. A. Extraction of free fatty acids from lipid material, 3518.

Mattock, G. [International Symposium on Microchemistry. Birmingham, 1958. Glass electrodes responsive to sodium ions, 3120.

Mathew, T. V. See Mallik, A. K., 1934, and Mitra, Mattox, V. R., and Lewbart, M. L. Determination of aldosterone in urine, 2912.

Maurel, A., and Gastaud, J. M. Determination of laevulic acid, 3316.

Maurel, H. See Ducret, L., 1276, 1314.

Maurer, W., and Blasko, E. Determination of sugar in potatoes for the correction of the calculation of vields in potato-starch manufacture.

Maurice, J. Spectrophotometric determination of mixtures of sodium pyrophosphate and sodium triphosphate, 1330.

Maurice, M. J., and Huizinga, F. Determination of carboxyl groups in poly(ethylene terephthalate), 5328

and Wiggers, B. G. Statistical comparison of the accuracy of two analytical methods, 1234.

Maurmeyer, R. [Progress in microchemistry.] Quantitative inorganic analysis, 2033.

Mayrodineanu, R. Bibliography on analytical flame spectroscopy, 1956, to March, 1959. I, 2589; II, 2589; III, 4091.

Maxim, I. See Braun, T., 2634, and Galateanu, I., 3650

May, S. See Daudel, P., 2031, and Leveque, P., 2031.

May, T. See Ressler, N., 230.

Mayer, A. See Thompson, H. V., 1674.

Mayer, R. M. See Vahouny, G. V., 4976.

Maynard, J. C. See Amphlett, C. B., 5147.

Maynard, W. R., jun. Gravimetric and infra-red

spectrophotometric determination of piperazine,

Mayneord, W. V., and Hill, C. R. Spectroscopic identification of α-emitting nuclides in biological material, 1479.

Mayr. G. Contribution of nuclear emulsions to the study of some cases of micro-radiochemistry, 845.

Maza, M. P. de la. See Pilar de la Maza, M.
Mázor, L., Erdey, L., and Meisel, T. Micro-determination of the sulphur content or organic compounds, 3791. Micro-determination of some elements in organic compounds after decomposition with potassium. I. Determination of halogens, 4805: II. Determination of sulphur,

and Pápay, M. K. Colorimetric determination of penicillin as the ferric hydroxamate complex,

Mazzei, I. See Venturello, G., 2060.

Mazziotti di Celso, P. See Celso, P. M. di.

Mead, A. P. See Osmond, R. G., 283.

Meadow, M. See Boyd, R. N., 4819.

Meagher, W. R., Anderson, C. A., Gonter, C. E.,

Smith, S. B., and MacDougall, D. Colorimetric determination of Dyrene [2:4-dichloro-6-o-chloroanilino-sym.-triazine] residues in plant material, 1974

Mebius, L. J. Determination of organic carbon in soil, 4524.

Mechelynck, P., and Mechelynck-David, C. Study of the polarographic behaviour of zirconium in acid medium and the presence of nitrate ions, 3191.

Mechelynck-David, C. See Mechelynck, P., 3191. Mecke, R., and Vries, M. de. Gas-chromatographic investigation of alcoholic beverages, 2979.

Meckelburg, A. See VEB Leuna-Werke "Walter Ulbricht", 2331. Meckenstock, K.-U. See Umland, F., 862, 4676. Medina, J. C. See Kaufmann, S., 4417.

Meditsch, J. O. See Oliveira Meditsch, J.

Meehan, E. J. See Kolthoff, I. M., 4888, 5241. Meeker, R. L. See Farrington, P. S., 1951.

Mehltretter, C. L. See Wise, C. S., 1066.
Mehrotra, R. C. See Sharma, N. N., 4639,

Mehta, C. R., Mankad, N. V., and Devani, M. B. Determination of lead in pharmaceuticals. I.

Mehta, T. N., Murty, M. S., and Meshramkar, P. M. Estimation of saturated fatty acids of a fat by bromination followed by urea adduction, 5452.

Meier, E. Iodimetric determination of halogens in organic substances, 4312.

Meier, J. See Jordan, J., 1629.
Meilgaard, M. Hop analysis, cohumulone factor
and the bitterness of beer: review and critical evaluation, 3998.

Meinke, W. W. Review of fundamental developments in analysis.] Nucleonics, 5125

See also DeVoe, J. R., 1290, 4623, Kaiser, D. G., 2363, and Sunderman, D. N., 2031.

Meinz, C. A., and La Mont, B. D. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Determination of copper, Gatlinburg. molybdenum, silver and palladium in aqueous thoria - urania slurries, 335

 See also La Mont, B. D., 335.
 Meisel, T. See Giber, J., 1797, and Mazor, L., 3791, 4805

Meites, L. Sub-microgram-scale analysis by coulometry at controlled potential, 843. End-point location in controlled-potential coulometric analysis, 1225.

— See also Baumgarten, S., 20.
Meites, S., and Hogg, C. K. Use of the Van den Bergh reagent for determination of serum bilirubin, 1497.

Mejbaum-Katzenellenbogen, W., and Dobryszycka, W. M. Quantitative determination of serum proteins separated by paper electrophoresis, 1145

Mela, C. See Ghielmetti, G., 706.

Mel'chakova, N. V. See Peshkova, V. M., 4718. Melgara, E. Spectrographic determination of magnesium in spheroidal cast iron, 2231.

Melhuish, W. H. Fractional micro-sublimation

technique, 3547.
Melichar, B., Horka, J., Nečesaná, E., and Malá, D. Azeotropic distillation as a method of drug control, IV. Determination of ethanol by distillation of the ternary mixture of ethanol, benzene and water, 2443.

and Jakubec, I. Azeotropic distillation as a method for drug control. V. Determination of ethanol by means of distillation of a ternary mixture ethanol - toluene - water, 4466.

Mellichamp, J. W., and Finnegan, J. J. Comparison of carbon and graphite electrodes, 3061.

Mellish, C. E. X-ray fluorescence spectroscopy. Applications of a simple apparatus using radioactive sources, 2566.

Mellon, M. G., and Boltz, D. F. Review of fundamental developments in analysis.] Light absorption spectrometry, 5125.

See also Campbell, R. H., 3657, 3707, and Wallace, G. W., 4224.
Mellor, D. See Irving, H., 2031.
Melnick, L. M. See Lewis, L. L., 3642, and McDuffle, B., 1335.

Mel'nikova, P. A. See Bulÿcheva, A. I., 424.
Melpolder, F. W. See Brown, R. A., 2029.
Meluzova, G. B. See Berezin, I. V., 1083.
Memminger, M. M. See Rapp, R. D., 4066.
Menassé, R. See Dahn, H., 1048.

Mendel, D. Determination of the pCO2 of the blood.

Mendelsohn, D. Colorimetric determination of micro amounts of higher unesterified fatty acids (C12 to C18) in blood, 659.

and Levin, N. W. Estimation of total body water using a colorimetric method for the determination

of antipyrin [phenazone] in plasma, 2354.

Mendlina, N. G., Novoselova, A. A., and Rÿchkov,
R. S. Dissolution of fused aluminium oxide and the determination of impurities, 3163.

Mendonça Pinto, C., Moysés, E., and Ribeiro Teixeira, E. Determination of small amounts of uranium in minerals by the phosphate - vanadate process, 3226.

Mendoza, R. R. See Rey Mendoza, R.

Mengel, K. See Scharrer, K., 287.

Menger, A. Determination of acidity in raw materials for dough and in dough products, 2964

Menis, O., Rains, T. C., Manning, D. L., Goldstein, G., and Rubin, I. B. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Determination of aluminium, zirconium molybdenum, uranium and titanium in thorium oxide slurries, 335.
- See also Ball, R. G., 907, Goldstein, G., 4723, and

Rains, T. C., 5182.

Menke, K. H. Photometric estimation of colour reactions on paper. Amino-acid determination, 4420.

Menke, M. R. See Hibbits, J. O., 2109, 2128, 2568, 4673, 5158.

Menn, J. J., Eldefrawi, M. E., and Gordon, H. T. Pre-chromatographic purification of insecticides from insect-tissue extracts, 4539.

Menon, V. P. M. See Athavale, V. T., 4743.

Menotti, A. See Cavina, G., 5388.

Menville, R. L., and Parker, W. W. Determination of organic halides with dispersed sodium,

Menzies, A. C. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Spectroscopy of flames in absorption and emission, 2031.

Mergenthaler, E. Analysis of crude fibre. Determination of crude fibre in foods, 260.

Merkulova, E. N. See Klimova, V. A., 552.

Merlin, E. See Hennart, C., 1796.

Merlin, E. See Hennart, C., 1796.

Mermod, M. See Ronchese, A. D., 2871.

Meros, E. J. See Machian, L. A., 4278.

Merritt, C., jun., Bresnick, S. R., Bazinet, M. L.,

Walsh, J. T., and Angelini, P. Determination of volatile components of foodstuffs. Techniques, and their application to studies of irradiated beef,

See also Sullivan, J. H., 2783.

Merritt, J. S., Taylor, J. G. V., Merritt, W. F., and Campion, P. J. The absolute counting of sulphur-35, 4750.

Merritt, W. F., and Hawkings, R. C. Absolute assay of sulphur-35 by internal gas counting, 4749

 See also Merritt, J. S., 4750.
 Mertens, A. See Bouquiaux, J., 4519.
 Merz, E. Precipitation of trace amounts of plutonium with mandelic acid, 120.

Merz, W. Micro-determination of elements in organic substances by the flask method. II. Determination of arsenic, 170.

Meshkova, V. M. See Karabash, A. G., 2641. Meshramkar, P. M. See Mehta, T. N., 5452.

Mestreit, J. Chemical determination of amine functions. Application to long-chain aliphatic amines, 3795.

Metcalfe, L. D. Use of cellulosic ion exchangers for determination of quaternary ammonium compounds, 3845.

See also Himes, J. B., 1136.

Meth-Cohn, O. See Bark, L. S., 5206. Metropolitan-Vickers Electrical Co., Ltd. Vapourphase chromatography, 1996.

Metson, P. See Dixon, B. E., 4508.

Metz, C. F. See Waterbury, G. R., 986, 2087.

Meulemans, O. Ferric chloride test for phenylpyruvic acid in urine, 3881. Phenylpyruvic acid in urine, 3882.

Meulendijk, P. N. Determination of pseudocholinesterase according to Vincent's method, 2419.

Meurs, N. van, and Dahmen, E. A. M. F. Conductimetric titration of carboxylic and phenolic acids in non-aqueous solutions. II. Titration of dibasic acids, 1419; III. The resolution of acid mixtures and some practical applications, 3313. Conductimetric and potentiometric titrations of nitrogen bases in non-aqueous solvents, 1798.

Mevel, N., Angot, J., and Vanoverberghe, L. Flamephotometric determination of potassium in

fertilisers, 4031.

and Lacruche, B. Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Application of a radiometric method to the determination of the degree of impregnation of a drained solid and the determination of the coefficient of washing, 2031. Radiometric determination of traces of magnesium in the presence of foreign cations, 2031.

Meybaum, Z. See Kurzawa, Z., 5184. Meyer, A. See Zonneveld, H., 3991. Meyer, A. S., jun. See Goldberg, G., 4770.

Meyer, H. [Brunswick, Germany]. See Luther, H., 2855.

Meyer, H. [Stuttgart]. See Bergner, K. G., 4488.

Meyer, O. See Gianola, G., 3378.

Meyer, S., and Koch, O. G. Analysis of oxide inclusions in steel in the microgram range. II. Determination of silica, alumina, iron oxide and manganese oxide, 1014. The solution spectral analysis of oxide inclusions in steel, 2734.

Meyer, V. Distribution of acetic acid in fish-pickling baths and its determination by steam-distillation,

Michaelis, P. Determination of hydrogen sulphide

in coke-oven gas, 1092.

Michaels, G. D., Fukayama, G., Chin, H. P., and Wheeler, P. Separation of plasma cholesterol esters for determination of iodine value and of cholesterol, 2407

Michal, J., and Zýka, J. Determination of small amounts of copper in metals with tetraethylthiuram disulphide (dicupral), 2070.

See also Sulcek, Z., 1342, 3639.

Michalec, Č., and Soběslavský, C. Paper chromatography of lipid substances, 4006.

Amperometric titration without applied e.m.f., 329.

and Galus, Z. Amperometric determination of calcium using one or two indicator electrodes, 36. and Stapor. W. Amperometric titration of

thallium without applied e.m.f., 58.

and Turowska, M. Diacridyl derivatives as

chemiluminescent indicators, 5. Michon, G. See Jeanmaire, L., 4475. Middleton, F. M. See Rosen, A. A., 2497. Middleton, K. R. Orange I method for determining soil nitrates and a comparison with the phenolsulphonic acid method for soils, 288.

Miedreich, W. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Determination of mineral constituents and of analytical composition of mineral mixtures by combined X-ray diffraction and X-ray spectrography, 2031.

Mielenz, C. Spectrophotometric method for the rapid visual analysis of metals, 2048

Miettinen, T., and Takki-Luukkainen, I.-T. Use of butyl acetate in determination of sialic acids,

Miglietta, E. Chromatography and spectrophotometry of some permitted colours, 5435.

Mihai, F. See Dick, J., 1023.

Mihail, G. See Armeanu, V., 375, 405.

Mihalovics, E. See Schaller, A., 3384.

Mijal, C. F. See Sullivan, M. X., 1138.

Mikes, J. A., and Szantó, J. Ion-exchange determination of sulphate, 2703.

Mikeš, O., Tomóšek, V., and Holeyšovský, V. Feeding device for step-wise gradient elution in solume absence tography. 1602 column chromatography, 1602.

Miketuková, V. See Suk, V., 3116.

Mikhailenko, Yu. Ya., Lebedev, N. N., and Kolchin, I. K. Determination of cymene and test.-butyltoluene isomers by infra-red absorption spectra,

Mikhailova, Z. K. See Ryabchikov, D. I., 2711, 4250

Mikhal'chuk, B. V., and Sazonova, Z. A. Photometric determination of copper in pyritic residues,

Mikl, O. See Klátil, M., 629. Mikola, J. See Enari, T.-M., 4482.

Mikschik, E. Iodoform reaction of hop bitter acids and their conversion products in wort and beer as a basis for quantitative determination, 4000.

Milaev. S. M. Colorimetric determination of large amounts of thallium, 415.

Milazzo, G. The Schumann region and its analytical possibilities, 4578.

Milburn, R. H. See Minehart, R. C., 4621.

Mil'chev, V. A. See Klyachko, Yu. A., 4593.

Miles, J. R. W. Manifold for solvent evaporation,

4045

Miles, T. D., and Delasanta, A. C. Qualitative test for distinguishing tris-(1-aziridinyl)phosphine oxide (APO) and tetrakis(hydroxymethyl)phosphonium chloride [THPC] by paper chromatography, 3375.

Miles Laboratories, Inc. Albumin diagnostic composition, 1871. Diagnostic compositions for the detection and estimation of glucose in urine and other body fluids, 3408. Diagnostic composition for the detection and estimation of glucose and other reducing sugars in blood, 5353.

Milićević, B. T., and Jankovic, S. Dj. Analysis of substituted acetic acids used as herbicides. IV. Separation of trichloroacetic acid and 2:4dichlorophenoxyacetic acid [2,4-D], 3540.

and Kostic, I. Lj. Analysis of substituted acetic acids used as herbicides. V. Joint determination of 2:4-dichlorophenoxyacetic acid and 2:4:5-trichlorophenoxyacetic acid [2, 4, 5-T] by the differential solubility method, 3540.

Miller, A. D., and Aranovich, M. I. Dithizone method for determining small concentrations of cyanides, 5185.

See also Aleskovskii, V. B., 1698, and Tyutina, N. A., 463.

Miller, B., and Hume, D. N. Coulometric titrations with electrolytically generated mercapto compounds. Applications of thioglycollic acid, 4640.

Miller, C. C., and Thow, D. H. Determination of tungsten as tristri-n-butylammonium 12-tungstophosphate, 972.

Miller. C. E. Neutron activation analysis methods for the group-VIII elements, 1016.

Miller, D. G. See Upson, U. L., 979.

Miller, D. M., and Latimer, R. A. Simplified nitrometer for use in the Dumas nitrogen determination, 3026.

Miller, E. E., and Bernfeld, P. Influence of the supporting medium on the fractionation of proteins by zone electrophoresis, 2398.

Miller, F. C. See Spinner, I. H., 114.
Miller, F. D. See Banerjee, D. K., 2670, and
Darling, D. J., 4061.

Miller, F. J., and Thomason, P. F. Thermometric titrations of acids in the presence of hydrolysable cations, 1650. Thermometric titration of uraniumIV with potassium dichromate, 1732.

— See also Zittel, H. E., 1285.

Miller, G. L., and Burton, A. L. Spectrophotometric determination of aldoses by an iodimetric procedure, 2767

Miller, M. T. See Guffy, J. C., 2689.
Miller, M. T. See Stone, L. R., 1967.
Miller, N. See Muldrey, J. E., jun., 5365.
Miller, R. G. J., and Willis, H. A. [International Symposium on Microchemistry. Birmingham, 1958.] Applications of the overtone region in infra-red analysis, 3102.

Miller, V. L. See Kimura, Y., 4838.

Miller, W. G., and Anderson, L. Isotope distribution in the Unterzaucher analysis of labelled oxygen compounds, 2252.

Miller, W. H. See Courchaine, A. J., 4973.

Mills, J. A. See Frahn, J. L., 1411.

Mills, P. A. Detection and semi-quantitative estimation of chlorinated organic pesticide residues in foods by paper chromatography,

— See also Storherr, R. W., 4474.

Milner, G. W. C. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Analysis in reactor research at Harwell, 335. Determination of beryllium by the photoneutron method, 891. Analytical chemistry of zirconium. A review, 4202. Developments in

polarography, 5138.

- Edwards, J. W., and Henry, W. M. Determination of beryllium by the photoneutron method. II. Methods for overcoming interferences, 2075. - and Nunn, J. H. Determination of uranium by

square-wave polarography, 2208.

Milner, O. I., and Gordon, L. The minimum ignition temperature of aluminium oxide precipitates,

- and Zahner, R. J. Titration of traces of ammonia after Kjeldahl distillation, 4213.

See also Liederman, D., 3359.

Milner, W. D. See Hudson, F. L., 3371.
Milos, C. Spectrophotometric determination of amphetamine in illicit drugs, 5416.

Milstein, C. Test for the presence of metals in biological materials, 3861.

Milthers, K. See Jensen-Holm, J., 1154.
Milun, A. J., and Nelson, J. P. Determination of small amounts of secondary amine in high-molecular-weight fatty primary amines, 2290.
Minachev, Kh. M. See Kondrat'ev, D. A., 3355.

Minami, E., Honda, M., and Sasaki, Y. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Ion-exchange separation of fission products, 2031.

- and Watanuki, K. Micro-titration of sulphate ions with barium rhodizonate as an inter-surface indicator, 468. Determination of sulphate ions by

the benzidine method, 960.

Minato, H. See Kolthoff, I. M., 4888. Minezewski, J. Evaluation of the precision of some methods of determination of the end-point in potentiometric titrations, 323. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] The u.v. spectrophotometric determination of the growth-regulator 2-naphthyloxyacetic acid in soil, 2031.

- and Kolyga, S. Titration in non-aqueous medium. Use of chromous acetate as a reducing agent, 111. Use of chromous salts for the potentiometric determination of uranium, chromium, iron

and vanadium in mixtures, 116.

Kolyga, S., and Wódkiewicz, I. Reductimetric determination of metals in non-aqueous media,

Przytycka, R., and Kohman, L. Potentiometric determination of small amounts of uranium VI in uranium dioxide, 978.

Mine Safety Appliances Co. Improvements in or relating to gas-analysis apparatus, 1983. Apparatus for electrically determining the concentration of hydrogen cyanide or hydrogen sulphide in air, 5472

Minehart, R. C., and Milburn, R. H. Scintillationbubble chamber, 4621.

Miner, F. J., Degrazio, R. P., Forrey, C. R., jun., and Jones, T. C. Separation and determination of aluminium in plutonium - aluminium alloys,

Minkoff, G. J. See Burt, R., 2031. Miranda, F., and Lissitzky, S. Ionic phenomena which modify separation in paper chromato-

graphy, 1605.

Miron, V. X-ray spectrograph as modified by Cauchois, adapted for use with a Geiger - Müller counter, 838.

Mirone, P., and Rossi, G. Spectrographic determination of trace elements in soils, 783.

Mishchenko, K. P., Tumanova, T. A., and Flis, I. E. Determination of sulphide, hydrosulphide and hydrogen sulphide when present together in pure aqueous solutions, 5220.

Miskus, R., Gordon, H. T., and George, D. A. Colorimetric determination of 1-naphthyl methylcarbamate in agricultural crops, 2502.

Misra, S. See Sen, A. B., 1323.
Miss, A., and Iancu, S. Methods of analysis for the control of the manufacture of sulphathiazole,

Missa, L. See Massart, R., 4513.

Missan, S. R., Ciaccio, L. L., McMullen, W. H.,
Pazdera, H. J., and Grenfell, T. C. Analytical
methods for rescinnamine, 3948.

Mistretta, A. G. [Progress in microchemistry.] Fractionation procedures. I. Differential migra-

tion methods, 2033.

Misumi, S., and Taketatsu, T. Indirect complexometric titrations of beryllium with ethylenediaminetetra-acetic acid, 1278. Complexometric titration of rare-earth elements. Dissolution of the rare-earth oxalate with EDTA and backtitration with magnesium sulphate, 1691. Separation of the rare-earth elements of the cerium group with cation-exchange resin and zinc - EDTA complex, 4181.

Mitchell, G. P., Orme, G., and Farrell, F. Simple cup-electrode for spectrographic analysis of

solutions, 826.

Mitchell, L. C. Separation and identification of six arseno-organic compounds by paper chromato-graphy: arsanilic acid, arsenosobenzene, arsphen-4-hydroxy-3-nitrophenylarsonic 4-nitrophenylarsonic acid and p-ureidophenylarsonic acid, 2806. Paper chromatography of 3-amino-1:2:4-triazole, 4532.

Mitchell, R. F. Electro-deposition of actinide elements at tracer concentrations, 4695.

Mitchell, W. A. Quantitative mineralogical analysis by X-ray powder diffraction, 5259.

Mitoma, C., Smith, T. E., Davidson, J. D., Udenfriend, S., DaCosta, F. M., and Sjoerdsma, A. Methods for measuring hydroxyproline in urine,

Mitra, B. K. See Majumdar, A. K., 1253.

Mitra, S. N., Mathew, T. V., and Mallik, A. K.

Application of Baudouin test to the analysis of honey. Detection of "HMF", 3501.

- See also Mallik, A. K., 1934, and Sengupta, P. N.,

Mitran, E. See Ionescu, M., 955. Mitsui, T. Nitrometer for Dumas nitrogen determination, 3788.

and Furuki, C. Weighing-tube for volatile liquids in carbon - hydrogen and Dumas nitrogen micro-determination, 4542.

See also Tagaki, W., 4859. Mitteldorf, A. J. See Arrak, A., 2034.

Mityureva, T. T., and Nizhnik, A. T. Determination of gallium in the products of lead and zinc manufacture, 1306.

Mitzner, B. M. See Kratz, P., 3052.

Miura, M., and Nagakane, T. Turbidimetric titration of sulphate ions. Colloid chemical consideration of the shape of the titration curve,

Miura, S. Determination of surface-active agents in vinyl emulsions. I. Determination of fattyacid soap, 2838.

Miura, Y. Metallurgical polarographic analysis.
VIII. Rapid determination of zinc in iron ores in the presence of nickel and cobalt, 47.

Miya, T. S. See Emmerson, J. L., 3483.

Miyai, T. See Uno, T., 2945.

Miyakawa, K. See Sato, Koichi, 2333. Miyakawa, T. Identification and determination of highly unsaturated fatty acids, 2997.

Miyake, S. See Takahashi, T., 1703, 3697, 4705,

Miyake, T. Determination of antibiotics. Colorimetric determination of oleandomycin.

Miyata, H. See Iwachido, T., 3601.

Mizukami, S., and Hirai, E. Applications of titration in non-aqueous solution. III. Determination of isoniazid and sulphafurazole in mixtures, 3486; IV. Determination of salts of phenothiazine bases, 3486.

- and Ieki, T. Studies on oxygen determination in organic micro-analysis. II. The microanalysis of oxygen by decrease in the quantity of

anhydro-iodic acid, 4308.

Ieki, T., and Numoto, K. Studies on oxygen determination in organic micro-analysis. I. Modified purification method of nitrogen gas,

Mizushima, S.-I. See Suzuki, S., 3904. Mkhitaryan, N. A. See Kreshkov, A. P., 2775. Mlejnek, O., and Seckarova, H. Application of the photometric determination of methanol to the control of the production of terephthalate lacquers, 5332.

Młodecka, J. Bromimetric determination of phenol

and cresol isomers, 1431.

Mobay Chemical Co. Spot-testing urethane polymers, 1458.

See Kawahara, M., 145. Mochizuki, H.

Mocker, F. Polarographic determination of accelerators, age-resisters and other organic substances used in the rubber industry. I, 630; II, 1839. Mogilyanskii, Ya. D. Detection of primary aromatic

amines, 2801.

Mohler, J. B. Analysis of sulphuric [aluminium] anodising solutions, 1689.

Mohr, E. Determination of aluminium in copper alloys, 3159.

See also Schramm, G., 697.

Mohrschulz, W. Micro-determination of alkaloids and alkaloid-like active substances in tablets, dragées and pills by means of Häussler's tropaeolin method, 3945.

Moiseeva, L. M., and Kuznetsova, N. N. Determina-tion of beryllium, 4672.

— See also Przheval'skii, E. S., 4136. Moizhes, M. Ya. See Bukina, V. K., 4804. Mokhov, L. A., Udalov, Yu. F., and Khalturin, V. S. Determination of nitrites and oxides of nitrogen, 83.

Moldan, B. See Doležal, J., 3223.

Moldavskii, B. L., and Ivanovna, I. I. Quantitative determination of a mixture of cyclohexyl nitrite, cyclohexanone and nitrocyclohexane, 605.

Molinari, R., and Lara, F. J. S. Lactic dehydrogenase of Propionibacterium pentosaceum. methods, 5394.

Moll, H. See Dahn, H., 1048.

Moller, K. D. See Lorenzelli, V., 180.

Moller, K. O. See Jensen-Holm, J., 1154.

Mollinger, H. See Bayer, E., 1731.

Molnár, L., and Domková, E. Colorimetric determination of esters of veratrum alkaloids, 4452.

and **Molnárová**, **K**. Oscillopolarographic determination of quinine alkaloids. II, 4449.

Molnárová, K. See Molnár, L., 4449. Momose, T., Inaba, A., Mukai, Y., and Watanabe, M. Organic analysis. XXIII. Determination of blood sugar and urine sugar with 3:6-dinitro-

phthalic acid, 4919.
- and Masuda, Y. Studies on tetralin derivatives.
V. Reaction of hydroxyacyltetralin oximes with

metal ions, 354.
- and **Ohkura**, **Y**. Organic analysis. XIII.
Estimation of hexoses with 5-hydroxy-1-tetralone, 571; XX. Micro-estimation of blood sugar with

5-hydroxy-1-tetralone, 3876.

Ueda, Y., and Goya, S. Organic analysis. XVI. Ultra-violet spectral study of substituent effect on benzenesulphonamide, 3487; XVII. Ultraviolet spectra of phenyl sulphone derivatives,

Ueda, Y., Sawada, K., and Sugi, A. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Reaction mechanism

of anthrone with sugars, 2031.

- Ueda, Y., and Shoji, T. Organic analysis. XIV.
Infra-red spectra of phenylsulphonyl derivatives. (3). The C-H deformation vibrations of the benzene ring, the CH, rocking frequencies of the SO₂CH₃ group and the characteristic absorption

bands of the SO₂NH₂ group, 2311.

Ueda, Y., and Yano, H. Organic analysis. XV. The infra-red spectra of the tetralin series, 1814. Momose, T., Ueda, Y., Yoshinaga, M., Masui, J., and Nagasaki, M. Organic analysis. IX. Modified method for the determination of glucuronic acid with 1:3-dihydroxynaphthalene, 651.

Monacelli, R. See Anselmi, S., 1578, 1941, 2996,

5434, 5445.

Monard, C., and Garrigues, C. Determination of dimethylnitrosamine and dimethylhydrazine applied to process control, 5288.

Mondovi, B. See Cavallini, D., 3909. Monk, P. R. See Green, N. C., 3474.

Monkman, J. L. Polarograph cell, 1632.

Monnier, D. Trace analysis and its applications,

- and Haerdi, W. A very selective determination of nickel with cyclohexane-1; 2-dione dioxime [nioxime], 546.
- Vogel, J., Haerdi, W., and Wenger, P. E. Macroand micro-determination of traces of cobalt. Cathode-ray polarographic study of cobalt, 1019; II. Separation of traces of cobalt by extraction with dithizone, 2736. Determination of trace quantities of cobalt by polarography, spectrophotometry and neutron activation, 5254.

Vogel, J., and Wenger, P. E. Polarographic determination of tyrosine, tryptophan phenylalanine in the presence of each other, 5372.

See also Haerdi, W., 1111, 2237, and Vogel, J., 3764

Montagnani, A., Santoianni, P., and Ieso, F. di. Mercurimetric determination of mercapto groups in skin homogenates by the rotating platinum electrode, 1864.

Montant, C., and Touze-Soulet, J. M. Electrophoresis of amino acids on cellulose powder, 4569.

Monte-Bovi, A. J., and Sciarra, J. J. Study of the poly(vinyl alcohol) - borate - iodine complex. I. Poly(vinyl alcohol) - boric acid as an indicator for iodometric - iodimetric titrations, 1241.

Monte Evens, F. See Fassel, V. A., 3123.

Montefredine, A., and Laporta, L. Applications of

spectrophotometry in the analysis of olive oil. I. Use of ultra-violet spectrophotometry for the characterisation of superfine virgin olive oil, 276; II. Contribution of ultra-violet spectrophotometry to the classification of the oils, 2475.

Monteriolo, S. See Visintin, B., 2031

Montgomery, D. S., and Boyd, M. L. Method of hydrocarbon structural group analysis, 1406.

— See also Boyd, M. L., 3357, 3358.

Montgomery, G. A. See Siegel, J. M., 223.

Montgomery, M., and Freed, V. H. Determination of micro amounts of isopropyl phenylcarbamate,

Monti, L. See Matelli, G., 3188. Montorsi, M. See Coppini, D., 1506. Montreuil, J., and Biserte, G. Sialic acid and the specificity of the periodic acid - Schiff's fuchsine reaction applied to electrophoresis on paper, with special reference to orosomucoid, 2899.

Mooney, R. W. See Ropp, R. C., 898.

Moore, C. C. See Dunbar, R. E., 3315.

Moore, F. L. [Symposium on solvent extraction in the analysis of metals.] Metals analysis with thenoyltrifluoroacetone, 4643.

Fairman, W. D., Ganchoff, J. G., and Surak, J. G. Selective liquid - liquid extraction of iron with 2-thenoyltrifluoroacetone in xylene. Application to homogeneous reactor solutions, 1003.

and Reynolds, S. A. Radiochemical determina-tion of uranium-237, 112.

Moore, J. A. See Camp, B. J., 4995.

Moore, R. V. See Boyle, E., 232. Moore, W. A. See Post, M. A., 3006. Mora, G. A. See Asensi Mora, G.

Morachevskaya, M. D., and Ptitsyn, B. V. Determination of iodides in the presence of bromides and chlorides by means of radioactive iodine,

Morachevskii, Yu. V., Efremov, G. V., and Chzhigy, S. Separation of thallium from accompanying elements by co-precipitation with silver iodide,

Morani, V., and Colloca, C. M. Ultra-violet spectrophotometry for the recognition of olive oil, 2474. Ultra-violet spectrophotometric studies on olive oil, 5446.

Morávek, V. Oscillographic polarography of steroids. II. Cholesteryl esters, 2903; III. Assay of steroids and their structural relations, 2903.

Moreno, F., and Vila, M. Identification of small quantities of fluorine in waters rich in chloride,

Morgan, A. See Bryant, F. J., 637. Morgan, C. U. See Sass, S., 3289. Morgan, D. M., and Kingsbury, K. J. Hydroxamic acid method for determining total esterified fatty acids in plasma, 1128.

Morgan, E. See Phillips, S. L., 1750.

Morgan, F. R. Electromicro-balance for weighing fibres, 4541.

Morgan, H. H., jun. See Gilbert, G., 3349.

Morgan, M. E. See Jensen, R. G., 264.

Morgan, P. J. Detection of small concentrations of

organic bases in urine, 1116.

Mori, H. See Sakai, S., 727, and Shimizu, M., 727.

Mori, Kan. See Nakaya, J.-I., 4339.

Mori, Kanaka. Micro-complexometric analysis of calcium in biological materials, 1471.

Mori, Kenji, and Nakamura, Michinori. The colorimetric determination of inorganic orthophosphate. 1. Determination of inorganic orthophosphate in the presence of some acidlabile phosphate compounds of biochemical significance, 1711; II. Determination of total phosphorus, 1711. Quantitative analysis of sugars in plant extracts by ion-exchange chromatography with special reference to the examination of conditions for preparing the sample sugar solutions, 2373.

See also Nakamura, Michinori, 2372.

Mori, S. See Ota, K., 534. Moricca, G. See Giovanella, B., 2948. Moricheva, N. P. See Kovalenko, P. N., 4220.

Morita, I. See Iwasaki, I., 2221. Morito, N. See Okamoto, J., 3648.

Moriya, Y. Separation and determination of boron in silicate by sintering with zinc oxide and sodium

carbonate, 4153. Moroshkina, T. M., and Abramichev, Yu. V. Spectrographic determination of molybdenum in tungsten trioxide and tungsten in molybdenum trioxide,

and Prokof'ev. V. K. Sintering of samples into buttons in the quantitative spectral analysis of crude samples, 4075.

— See also Prokol'ev, V. K., 1252. Morozov, A. A. See Grigorenko, I. N., 4146. Morpain, R., and Courtecuisse, S. High-frequency titration apparatus, 2023.

Morrell, F. A. See Varsel, C. J., 4298.

Morris, A. G. C. Dissolution of barium sulphate by EDTA and sodium hydroxide, 2186.

and **Bozalek, S. J.** Determination of sulphate in superphosphate, 2499.

Morris, C. J. See Thompson, J. F., 224, 669,

Morris, D. F. C., and Killick, R. A. Determination of silver in galena and blende by radioactivation analysis, 888. Determination of ultra-micro quantities of silver in platinum sponge by neutronactivation analysis, 2630. Determination of silver and thallium in rocks by neutron-activation analysis, 4669.

- and Olya, A. Determination of tantalum in

rocks by neutron-activation analysis, 5217.

Morris, W. W., jun. See Wilkie, J. B., 1581.

Morrison, G. H., and Freiser, H. [Review of fundamental developments in analysis.] Extraction, 5125.

See also Freiser, H., 4643.

Morrison, L. G. Rotatable fraction collector for a semi-micro distillation apparatus, 3032.

Morrissette, R. A. See Link, W. E., 1942.

Morrow, K. A., and Tretow, E. F. Determination of carbon in zirconium and zirconium-base alloys, 2141.

Morton, R. A. [International Symposium on Micro-Birmingham, 1958.7 Biochemical chemistry. applications of absorption spectra in the visible and ultra-violet regions, 3102.

Mosburg, E. R., jun. Scintillation counter method of intercomparing neutron source strengths by means of a manganous sulphate bath, 844.

Moscatelli, E. A. See Horning, E. C., 816.

Mosen, A. W., and Buzzelli, G. Determination of impurities in helium by gas chromatography,

See also Van Kooten, E. H., 364, and Willard,

Moses, A. J. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. niques and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Hot laboratory procedures used in burn-up analyses at Bettis Plant, 3103.

- and Cook, H. D. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part 2. Instrumentation, remote-control techniques and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Radiochemical and mass-spectrometric studies of fission-product caesium, 3103.

Moshier, R. W. See Chan, F. L., 3760.
Mosina, A. S. See Ershov, B. P., 5326.
Mosley, R. W. See Cole, L. G., 3283.
Mosley, V. M., and Wyckoff, R. W.

Micro-radiography for absorption analysis, 315.

Moss, D. W. Spectrofluorimeter for biochemical analysis, 5507.

Moss, P., and Thomas, A. J. Detection and estimation of benzenoid compounds by chromatography,

Mossel, D. A. A. See Eijgelaar, G., 273. Moszczyńska, J. See Górski, A., 3551. Motas, M. See Bogdan, E., 5251.

Motchane, A. E. See Napoli, J. A., 3522. Motojima, K., and Hashitani, H. Determination of copper 8-hydroxyquinolinate used as fungicide and antiseptic, 4038.

Motova, Z. A. See Skornyakov, G. P., 1372.

Mott, R. A., and Parker, C. Studies in bomb calorimetry. X. Conditions for the combustion

of solid and liquid fuels, 2822.

Motta, L. See Bua, E., 2756.

Mottern, J. L. See Feldman, C., 3103.

Moučka, M. See Kovařík, M., 55.

Mouret, P. See Blanc, A., 2031.

Moustafa, A. S. See Amin, A.-A. M., 4094, and El Raheem, A. A. A., 2594, 4113.

Mouton, M., and Masson, M. Spectrophotometric determination of p-hydroxypropiophenone in several pharmaceutical preparations, 723.

Mowery, D. F. Separation and quantitative determination of methyl arabinosides using a starch column with an improved automatic control. 2771.

See Ressler, N., 1999. Moy. T.

Moysés, E. See Mendonça Pinto, C., 3226. Mück, E. See Langmaier, F., 1462.

Mueller, J. I., Scotti, V. G., and Little, J. J. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part 2. Instrumentation. remote-control techniques and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Fluorescence X-ray analysis of highly radioactive samples, 3103.

See also Scotti, V. G., 3103.

Mukaewaki, K. Photometric determination of niobium in iron and steel by the molybdenum blue method, 1760. Rapid analysis of iron-pickling liquor. VI. Determination of sodium chloride in sulphuric acid pickling liquor, 3738.

Mukai, K., and Goto, K. Rapid determination of aluminium and fluoride in the presence of each other, 3667.

See also Momose, T., 4919.

Mukerjee, H. Paper chromatography of volatile fatty acids, 1180.

Mukhamedov, Kh. U. See Finkel'shtein, M. Z.,

Mukherice, A. K. See Majumdar, A. K., 887, 2171. 2696, 3713.

Mukherjee, J. See Bhattacharyya, A., 1557. Mukherji, A. K. See Sant, B. R., 450. Mukherji, S. P. See Parikh, P. M., 257, 726, 3974,

Mukhina, G. K. See Klimova, V. A., 3782. Mulder, G. J. Micro-determination of fluoride in urine, 1113.

Muldrey, J. E., jun., Miller, N., and Hamilton, J. G. Quantitative glass-fibre-paper chromatography: phosphatidylcholine and sphingomyelin, 5365.

Mullen, P. W., and Anton, A. Multi-function automatic recording photometric titrator, 4088. Müller, D. C. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Interaction of beta-particles with matter. III

Organic compounds, 2031.

Müller, E. See Poethke, W., 1886.

Müller, E. F. E. See Kunstmann, F. H., 69.

Müller, J. See Pour, V., 4046.

Müller, K. H., and Hackenberg, E. Photometric determination of arbutin in drugs and pharmaceutical preparations, 2429.

Müller, R. See Krampitz, G., 4422.

Müller, R. H. (Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Interaction of beta-particles with matter. II, 2031. New automatic recording balance suggests possible uses besides weighing, 5060. [Review of fundamental developments in analysis.] Instrumentation, 5125.

Müller-Uri, G. See Guttmann, W., 5099. Munch-Petersen, A. See Barker, H. A., 3941.

Municio, A. See Astudillo, M. D., 2031.

Muntoni, F. Determination of diastatic power in

malt extracts, 1179. Murai, K. Analysis of pharmaceuticals by the indophenol reaction. V. Determination of V. Determination of hesperidin and eriodictin in citrin, 656.

Murakami, A. See Matsunaga, A., 4035, and Sera, K., 4034.

Murakami, T. Determination of sulphuric acid in an acetylating mixture, 959. Determination of nitrogen in nitrocellulose and nitric acid. II. Other gases in the nitric oxide produced by the Lunge method, 2158; III. Composition of the gas evolved by the Lunge method, 2158; IV. The correction for practical analysis, 2158; V. Volumetric determination of nitric acid and nitrate by reduction with stannous chloride, 2158. - and Ishii. E. Photometric determination of nitrogen in nitrocellulose, 1830.

Murata, T. See Shinagawa, M., 1738. Murata, Y. See Kobayashi, Y., 2278. Muratov, F. Sh. See Chzhou-Sin, 3142.
Muratov, F. Sh. See Chzhou-Sin, 3142.
Muratt, K. C. See Kay, W. W., 3910.
Muroi, K. See Matsudaira, J., 3844.
Muroi, S. See Suzuki, N., 1762.

Murphy, C. B. [Review of fundamental developments in analysis.] Differential thermal analysis,

See also Hill, J. A., 1630.

Murphy, E. A. See Dunn, M. S., 4949.

Murphy, M. E. See Claver, G. C., 2339.

Murphy, R. P. Benedict's solution as a developer

in carbohydrate chromatography, 4412.

Murray, A., III. See Petersen, D. F., 5081. Murtas, P. Spectrographic analysis of structural steel by the point-to-plane technique with a copper counter-electrode, 2228.

Murtazaev, A. M. See Gengrinovich, A. I., 5003. Murthy, A. R. V., and Sharada, K. Determination of sulphide sulphur in minerals, 5219.

— See also Rao, V. R. S., 5183.

Murthy, G. K., Jarnagin, L. P., and Goldin, A. S.

Determination of radio-nuclides in milk ash,

Murty, B. V. S. R. See Rao, G. G., 4967.

Murty, M. S. See Mehta, T. N., 5452.

Murty, N. L. See Craig, B. M., 4492.

Mus, R. See Castel, P., 709.

Musha, S., Ito, M., Yamamoto, Yoshiziro, and Inamori, Y. Chemical luminescence analysis. II. Chemical behaviour of cyanide ions towards the chemiluminescence of luminol [3-aminophthalhydrazide] and the determination of cyanide ion by measurement of the induction period, 4186

- and Ogawa, K. Ferron as an indicator in the complexometric titration of ferric iron, 1000. and Sugimoto, K. Spectrophotometric study of

acid - base indicators, 853.

Mushegyan, L. G. See Tarayan, V. M., 519, 4265. Musick, W. R. See Feldman, C., 3103. Musil, A., and Weidmann, G. Determination of the

partition coefficient of praseodymium and neodymium in the tributyl phosphate and nitric acid system, 3677

Mustafin, I. S., and Frumina, N. S. Determination of active oxygen in charged metal - ceramic nickel electrodes, 5218.

- and Kruchkova, E. S. Hydron II—A new indicator for the complexometric determination of calcium in the presence of magnesium, 4098.

Mutschler, E., and Rochelmeyer, H. Separation of amino acids by thin-layer chromatography, 2392.

— See also **Teichert**, K., 5491.

Myasishcheva, N. V. Determination of vitamin B₁₂ in blood, 3885.

Myers, B. J. Semi-micro determination of sulphur in wool, 2336.

Myers, J. T. See Ackerman, J. A., 4956. Myers, J. W. See Corey, R. C., 429. Myers, M. See Schultz, L. H., 270.

Myers, N. A. Separation of strontium-90 from calcium in milk, 734.

Myszkowska, K., Tautt, J., Tuszyńska, S., and Woźniak, W. Microbiological determination of thiamine, 1181.

Nabivanets, B. I. Colorimetric determination of molybdenum as the thiocyanate complex,

Nachbaur, E., and Engelbrecht, A. Gas-chromato-graphic separation of nitrogen trifluoride from carbon tetrafluoride, 2159.

Nachlas, M. M., Margulies, S. I., and Seligman, A. M. Colorimetric method for the estimation of succinic dehydrogenase activity, 4442.

Nachmanovich, A. S. See Shergina, N. I., 2306.

Nadeau, G., and Sobolewski, G. Identification and determination of drugs of the phenothiazine group by chromatography on paper, 2436. See also Sobolewski, G., 4911.

Nadezhdina, L. S., and Kovalenko, P. N. Determination of traces of nickel and cobalt in zinc

electrolytes, 1288.

Nadezhina, L. S. Colorimetric determination of antimony in chromium - nickel alloys, 4222.

— See also Razumova, V. P., 3652. Nadkarni, M. N., Nair, G. G., and Venkateswarlu, C. Separation and determination of titanium in stainless steels, 3753.

Nagai. H. Paper chromatography of inorganic cations with dithizone. I. Separation of copper, cadmium, mercury, lead and bismuth by precipita-

tion paper chromatography, 2052.
Nagai, T. See Ishibashi, Masayo
Ishibashi, Michihiro, 458. See Ishibashi, Masayoshi, 2078, and

Nagakane, T. See Miura, M., 961. Nagasaki, M. See Momose, T., 651. Nagase, Y., Baba, S., and Suzuki, Michio. Analysis of drugs by the infra-red spectrum. I. Determination of saccharin and dulcin in a mixture by the potassium bromide pellet method, 3508.

the potassium bromide pener meth Nagel, F. See Wickbold, R., 1687. Nägele, W. See Lippert, E., 3069. Nager, M. See Peurifoy, P. V., 2300. Nagy, L. See Bognár, J., 125, 2218. Nahum, L. Z. See Gaslini, F., 579.

Nalmark, L. E., and Yudelevich, I. G. Quantitative spectrographic determination of thallium, indium, germanium, gallium, tellurium and cadmium in products of lead production, 866.

Nair, A. P. M. See Santhanam, K. S. V., 2227.

Nair, G. G. See Nadkarni, M. N., 3753. Nair, N. C. See Clair, E. G., 3481. Naka, K., and Iwamatsu, H. Deter

Determination of calcium and magnesium by the EDTA titration method. I. Determination of calcium and magnesium in high-purity titanium slag, 1676.

Nakagawa, G. Electrolytic analysis by the use of chelating agents. I. Electrolytic determination of cadmium in the presence of zinc with EDTA, 2055; II. Determination of copper in the presence of bismuth with diethylenetriaminepenta-acetic acid, 2055; III. Determination of zinc in the presence of nickel and the successive determination of cadmium and zinc by the use of EDTA, 2055. Polarographic determination of a small amount of zinc in cadmium with the aid of thiocvanate extraction, 4148. Polarographic determination of tin in the presence of lead. Application of the extraction with ammonium thiocyanate, 4191.

Nakahara, M. See Fukutomi, T., 101.

Nakai, T., Yajima, S., Fujii, I., and Okada, M. Activation analysis by short-life nuclides. I. Determination of hafnium in zirconium by hafnium-179m, 442. Neutron activation determination of impurities in silicon for semi-conductor material, 1694.

Nakajima, Terumi. See Ishidate, M., 3413. Nakajima, Tokunosuke, and Takahashi, Masao. X-ray fluorescence analysis of thorium oxide in monazite, 1704.

- Takahashi, Masao, and Kawaguchi, H. Spectrographic determination of impurities in pure uranium. I. Determination of boron, manganese, magnesium and aluminium, 493; II. Determination of rare-earth elements, 493.

Nakajima, Y. See Okamoto, J., 3648. Nakamura, E. See Ishimori, T., 1741.
Nakamura, I. See Tamagishi, M., 685.
Nakamura, Matao. See Yoshihiro, Y., 609.

Nakamura, Michinori, and Mori, Kenji. Simple method for quantitative analysis of sugars by ion-exchange chromatography, 2372.

See also Mori, Kenji, 1711, 2373. Nakao, S. Determination of copper in pyrites and

pyrites cinders. I; II, 2626.

Nakaya, J.-I., Mori, Kan, Kinoshita, H., and Ono,
S.-I. Polarography of α-hydroxyimino acids,

Nakayama, K. Determination of ferric iron in hydrochloric acid with titanous chloride, 1004.

Nakayama, T. O. M. See Friend, J., 2883. Nakhamovich, A. S. See Shergina, N. I., 2795. Namba. S. Photo-electric recording interferometer for gas analysis, 2572.

Nandi, R. C. See Sarin, J. P. S., 3466. Napoli, J. A., Senkowski, B. Z., and Motchane, A. E.

Determination of vitamin A, 3522. Volumetric determination of iodine Napoll, I. value, 2991.

Narbutovskii, T. S. See Frenkel', O. D., 1271. Narita, K., and Ishii, M. Determination of nitrogen in organic substances, 3285.

Narusawa, Y. See Hamaguchi, H., 917.

Näsänen, R., and Veivo, J. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Studies on the stability of some metal chelates of tiron, 2031.

Nassi, L. Radial chromatography of bile pigments,

Nasu, T. Back-titrimetric method for the determination of zinc with methyl red as adsorption indicator, 4144.

and Kumagai, R. Back-titration of zinc with methyl red as adsorption indicator in the presence of ferrocyanide, 1678.

Nasu, Y. See Uzumasa, Y., 1954.Natelson, S. [Progress in microchemistry.] Biochemical investigations, 2033.

Richelson, M. R., Sheid B., and Bender, S. L. X-ray spectroscopy in the clinical laboratory. I. Calcium and potassium, 4901.

Nathan, D. G., and Warren, K. S. Colorimetric method for the measurement of the brain ammonia of the mouse: effect of glutamine on the total measurable ammonia, 211.

National Research Corp. Determination of the quantity of hydrogen in metal samples, 2059.

Natochin, Yu. V. Viscosimetric micro-determination of hyaluronidase activity in biological fluids, 4444

Natoli, A. See Cavina, G., 5388.

Naumann, E. Determination of chloride ion concentration by argentipotentiometry, 505.

Naumova, I. I. See Lbov, A. A., 1229.

Navellier, P. Preservation of milk samples and the analysis of altered milk. I. The preservation of milk samples, 2452.

Navrátil, F. See Matrka, M., 2812, 4881.

Nazarchuk, T. N. Photometric determination of tin. 3184.

See also Kotlyar, E. E., 5168.

Nazarenko, I. I. See Ryabchikov, D. I., 3246. Nazarenko, V. A., Fuga, N. A., Flyantikova, G. V., and Esterlis, K. A. Analysis of pure metals. Determination of lead and zinc impurities in indium and thallium, 4172.

and Lebedeva, N. V. Use of trihydroxyfluorone derivatives in colorimetric analysis. Reagents for germanium, 2119.

See also Biryuk, E. A., 418.

Neagu, V. See Antonescu, V., 4622. Neal, D. J. See Bradley, H. B., 2860. Neau, C. See Ploquin, J., 4330.

Nebbia, G. Polarimetric method for the determination of ascorbic acid, 765.

and Pizzoli, E. M. Countercurrent distribution for the analysis of carotenoids, 2882.

Nebbia, L., and Pagani, B. Determination of aromatic amines by column chromatography of azo derivatives, 2802. Quantitative determination of piperazine in the presence of ethylenediamine and diethylenetriamine, 2815.

Nečesaná, E. See Melichar, B., 2443.

Nechaeva, E. A., and Lapidus, É. S. Complexo-metric determination of the sum of titanium and aluminium in clay, 1035.

Nechamkin, H. Volumetric method for the determination of tin in simple solders, 4709.

Nedvědová, V. See Pečený, R., 4885.

Neeb. R. Analysis of mixtures of aluminium. gallium and indium oxinates by infra-red spectrography, 2645. Anodic amalgam voltammetry. I. Principle of the method, 3127; II. Determination of small amounts of lead, cadmium, bismuth and

thallium, 3127.

Needleman, M. Determination of micro amounts of dissolved oxygen in water, 3530.

Negishi, R. See Hamaguchi, H., 3682. Negoiu, D. See Popa, G., 421, 1030, 4205. Negrusz, E. Selective gravimetric me

Selective gravimetric method of determination of cerium in rare-earth oxides.

Nehring, K. See Hübsch, H., 4808. Neihol, R., and Schuldiner, S. Simple non-gassing electrodes for use in electrophoresis, 4568.

Neiman, M. B. See Efremov, V. Ya., 3303. Nel, W. See Basson, R. A., 3051.

Nelson, B. N. [Review of fundamental developments in analysis.] Statistical methods in chemistry,

Nelson, D. F. Identification of Lucas 700 headlampglass fragments by their physical properties, 1044.

Nelson, G. J., and Freeman, N. K. Serum phospholipid analysis by chromatography and infrared spectrophotometry, 1499.

Nelson, J. P. See Milun, A. J., 2290. Nelson, N. A. See Ressler, N., 230, 2401. Nelson, V. A., and Wrangell, L. J. Application of EDTA to the titrimetric determination of nickel in non-ferrous alloys, 3769.

Nelson, W. O. See Opperman, R. A., 2113. Neporent, B. S. See Kiseleva, M. S., 2490. Nerdel, F. See Petrowitz, H. J., 5308, and Schrader,

Nerheim, A. G. Head and flask for miniature distillation, 3549. Gas - liquid chromathermography, 5086.

See also Jones, F. S., 3031.

Nesanelis, M. Z. Spectrographic determination of titanium in steels, 1364.

Nessonova G. D., Pogosyants, E. K., and Lishevskaya, M. O. Colorimetric determination of cobalt by means of its reaction with glycerol,

Nesterov, V. E. See Emel'yanov, V. A., 1960.
Nestler, C. G., and Nobis, M. Photometric determination of vanadium with catechol in micro-

analysis, 95.

Neu. R. Quantitative determination of the fatty acid monoesters of α: ω-dihydroxypolyoxyethylene sorbitan [Tweens] with sodium tetraphenylboron, 2327. Detection of flavanones and hydroxyflavanones by a specific reaction, 2376.

Neudert, W. See Röpke, H., 3075. Neudorfer, F. See Kainzner, A., 513.

Neugebauer, J. See Hegedüs, A., 110. Neuilly, M. Spectrographic determination of tantalum and niobium in 18/8 stainless steels,

Neumann, F. See Bode, H., 2596, 3614. Neumayer, J. J. Determination of molecular weight using thermistors, 850.

Neuninger, H. See Machata, G., 2959, 4402. Neurath, A. R., and Frič, F. Quantitative evaluation of paper chromatograms, 300.

Neuwald, F., Didier, H.-J., and Grimmer, G. Column-chromatographic method for the determination of digitoxin in digitalis leaves, 4998.

Neville, R. G. See Clark, R. E. D., 2038. Newell, D. M. X-ray photometric analysis of

plutonium in concentrated nitrate solutions, 119. Newman, P. M., and Turnbull, J. H. New colori-metric method for the estimation of histidine and histamine, 4430.

Newton, A. S., and Waters, S. J. Mass spectra of some organic and inorganic compounds, 13.

Newton, P. See Dupée, L. F., 5058. Ney, —. See Jaulmes, P., 5442. Nicaud, C. See Châtelet, M., 2031.

Nicholas, D. J. D. [International Symposium on Microchemistry. Birmingham, 1958.] Use of fungi for determining trace metals in biological material, 3102.

Michols, H. A. See Wood, D. F., 4207.

Nichols, A. V. See Del Gatto, L., 1518.

Nichols, C. W. See Webster, W. W., 233.

Nicholson, D. E. Determination of isomeric methyl benzoyl chlorides, 599. Determination of isomeric dimethyl methyl benzoates, 600. Determination of polymethylbenzyl benzoates, 2308. Determination of isomeric dimethylbenzyl alcohols, 3333. Determination of anhydrides derived from dimethylbenzoic acids, 3338. Determination of isomeric methylbenzyl benzoates, 3339.

— and **Hastings**, **S. H.** Determination of C₁₀ alkylbenzenes, 590. Determination of C₁₀ to C₁₁ naphthalenes, 2312. Determination of C₁₀ alkylbenzenes, 3325. Determination of C₁₀ to C C12 alkylbenzenes, 3326. Determination of 1:3and 1:4-dimethylbenzenes in benzonitrile, 3328.

Determination of C_s alkylbenzenes, 4840.
- See also **Hastings**, **S. H.**, 589, 591, 2302, 3324, 3327, 4839, 4841, and **Lumpkin**, **H. E.**, 3814. Nicholson, R. I. Determination of dextran and

starch in cane juices and sugar products, 2446.
— See also Hidi, P., 4472.
Mickless, G. See Pollard, F. H., 348.
Nicksic, S. W. See Farley, L. L., 4089.

Nicolaescu, V., and Ioan, S. Indirect determination of the sulphate ion in sulphuric acid and pyrites by flame photometry, 2704.

Nicolas, M. B. See Blass, J., 4418. Niederland, T. R. See Dzúrik, R., 658. Niedermaier, T. See Lux, H., 3117. Nielsch, W. Determination of small amounts of

cobalt with 2-nitroso-1-naphthol by extraction with chloroform, 1018. Photometric determination of nickel in cobalt and its salts with sodium

dimethylglyoxime, 2242.

and Giefer, L. Photometric determination of isonicotinic acid hydrazide [isoniazid], its derivatives and their metabolites in biological samples. I, 2943; II, 3404. Determination of pyridine and its derivatives with cyanogen chloride and barbituric acid, 3352. Determination of isoniazid and N-acetyl-D-glucosaminyl isonicotinic acid hydrazide with sodium 1:2-naphthaquinone-4sulphonate, 3969.

Nielsen, M. L. See Pustinger, J. V., jun., 3703. Nieman, C. Standard analysis methods in the European confectionery industry, 1911.

Nieto, F. See Buscaróns, F., 2031

Niewiadomski, H., Zwierzykowski, W., and Ploszyński. M. Conductimetric titration of surface-active agents such as alkylarylsulphonates, alkylsulphonates and alkyl sulphates with p-toluidine hydrochloride, 4376.

Nigam, H. L. See Kapoor, U., 5130. Nigam, I. C., Dhingra, D. R., and Gupta, G. N. Potentiometric estimation of carbonyls in Indian vetiver oils, 196.

Nightingale, E. R., jun., and Benck, R. F. Precipitation of crystalline iron^{III} oxide from homogeneous solution, 4785.

Niimoto, A. See Zeitlin, H., 1068. Niketic, G. See Luh, B. S., 3506.

Nikiforova, E. F. Spectrographic determination of the association between the distributions of phosphorus and arsenic in steel, 3263.

Nikishkina, P. I. Photometric determination of boron in plants by the carmine method, 5047.

Nikitina, E. A., and Partashnikova, M. Z. Determination of silicon and phosphorus in reagents without the use of organic solvents, 923.

Nikitina, E. I. Photometric determination of titanium in titanium borides with arsenazo, 2126.

Nikitina, L. D. Determination of the sum of sesquioxides and titanium dioxide in apatite concentrate, 3189.

Nikitina, O. N. Thin-walled carbon electrodes for spectrographic analysis, 3565.

Nikkari, T. See Haahti, E., 5497. Nikolaeva, L. I. See Tsintsevich, E. P., 1307. Nikolaeva, N. A. See Sokolova, N. V., 2255. Nikolaeva, Z. V. See Lur'e, Yu. Yu., 4029. Nikol'skaya, I. V. See Kuznetsov, V. I., 4760, and

Luk'yanov, V. F., 3197.

Nikonorow, M. See Piechocka, J., 3978. Nikonova, M. P. See Poluéktov, N. S., 3176. Nilova, I. S. See Shvarts, D. M., 2103. Nishihara, A. See Matsuno, N., 5368.

Nishikawa, Y. See Ishibashi, Masayoshi, 1305. Nishimura, M. See Uzumasa, Y., 1954. Niskanen, R. A. See Smirnov, B. P., 5036. Nitadori, J., Koenuma, Y., and Koseki, K. Deter-

mination of volatile matter in coal and coke by the nitrogen tube method. II. Influence of the initial temperature, 2833.

Nixon, E. R. See Linton, H. R., 192. Nizhnik, A. T. See Mityureva, T. T., 1306. Noack, K. See Angell, C. L., 3818.

Nobbs, J. McK., Sinclair, D. A., and Whittem, R. N. Pulsed discharges for the spectrochemical analysis of impurities in brass, 4667.

See Nestler, C. G., 95. Nobs, H. See Geiger, E., 956. Noda, Y. See Ishida, T., 2779. Noe, J. See Sawicki, E., 4354. Noë, R. See Peeters, H., 822. See Geiger, E., 956. See Ishida, T., 2779.

Nogare. S. D. [Review of fundamental developments in analysis.] Gas chromatography, 5125. and **Harden**, **J. C.** Programmed-temperature gas-chromatography apparatus, 3045

Noguchi, M., and Kitajima, M. Photometric titration of camphor in dilute solution by the oxime method, 4363.

Nooyer, J. A. de, and Smit, G. B. Conductimetric determination of the total salt content of boiler

Nordin, B. E. C. Estimation of "free" calcium in urine and its relevance to calculus formation,

Nordlander, S. See Bonnichsen, R., 4405.
Nordlie, R. C., and Fromm, H. J. Ribitol dehydrogenase. II. Studies on the reaction mechanism. Determination of D-ribulose, 2880.

Norris, F. W. Short cuts to "lines of best fit" in microbiological assays of vitamins, 3000.

Norris, K. H. See Butler, W. L., 5502.
Norris, M. V., and Kuchar, E. J. Colorimetric estimation of malathion residues in cottonseed, 1593

Norton, W. T. Potentiometric iodimetric determination of plasmalogen, 4933.

Analytical chemistry of calcium resinate, 628.

Norwitz, G. Colorimetric determination of diethyl, dibutyl and dioctyl phthalates in ball propellents,

Nosenko, N. I. See Likhodel, L. S., 2249.

Notkina, M. A., and Solodovnik, S. M. Spectrographic determination of impurities in alkali and

alkaline-earth metals, 2062.

Noto, T., Sawada, H., Sato, Y., Fukuda, N., and Inoue, Yoshiyuki. Determination by ultra-violet absorption spectra of 6-mercaptopurine and its hydrate, 258.

Notrica, S. See Ware, A. G., 1525. Novák, J. J. K. See Krupička, J., 5279. Novák, L. See Mastner, J., 3042.

Novák, M., and Hromádková, V. Paper-chromatographic determination of fatty acids by means of the copper - tetraethylthiuram disulphide complex, 4493.

Vavrečka, M., and Vokáč, V. Ultra-micro determination of transaminases, 4987.

Novák, V. Conductimetric determination of alkali metals and ammonium in the presence of magnesium, 3624.

Novak, V. P. See Mal'tsev, V. F., 3237. Novel, E., and Burkard, P. Bacterial analysis of water by the membrane-filter technique, 774.

Novellie, L. Kaffircorn [sorghum] malting and brewing studies. III. Determination of amylases in kaffircorn malts, 2467.

Novgorodtseva, A. T. See Skornyakov, G. P., 1372. Novik, R. M., and Lyalikov, Yu. S. Polarographic determination of iodides in fused salts, 510.

Novikova, A. N. See Andreev, A. S., 3269.

Novikova, E. N. See Bugorkova-Zelenetskaya,
A. A., 2747, and Petrova, L. N., 573, 575.

Novoselova, A. A. See Mendlina, N. G., 3163.

Novoselova, A. V. See Chita, F., 4099.

Novoshý, L. See Chita, F., 4099.

Novozhilova, K. I. See Korshun, M. O., 5264.

Nowak, F. A. See Loveland, J. W., 65.

Nowicka-Jankowska, T., Golkowska, A., Pietrzak, I., and Zmijewska, W. Spectrometric determination of impurities in nuclear-pure uranyl nitrate. 498.

and Szyszko, H. Spectrophotometric determination of boron in reactor materials. II. Determination in ammonium fluoride, 407

Nozaki, Tadashi, Baba, H., and Araki, H. Ne activation analysis of iodine in silicon, 4702. Neutron

Nozaki, Toru. Indirect colorimetry of strontium,

and Ueno, Kaoru. Ultra-violet spectrophotometric determination of chromium with the aid of ion-exchange resin, 478.

Nuenke, B. J. See Cunningham, L. W., 1509.
Nummi, M. See Enari, T.-M., 4482.
Numoto, K. See Mizukami, S., 4308.
Nunn, J. H. See Milner, G. W. C., 2208.
Nunoko, N. Fractionation of sugars in beet molasses

-fractional determination of raffinose, 5428.

Nürnberg, E. Thin-film chromatographic investigations of some organic nitrogen compounds used in pharmacy, 3489.

Nury, F. S., Taylor, D. H., and Brekke, J. E. Colori-metric method for determination of sulphur dioxide in dried fruits, 743.

Nuttall, R. L., Frisch, M. A., and Hubbard, W. N. Glass combustion bomb, 5512.

Nyari, E. See Waltz, P., 705.

Nydahl, F. Complexometric titration of aluminium. The Wänninen - Ringbom method, 5172.

Nyman, C. J., and Alberts, G. S. Polarography of thiocyanate ion. Complex-ion formation with mercuryII ion, 4235.

Ragle, J. R., and Linde, P. F. Polarographic characteristics of ammonium ion and ammonia, 4728.

See also Roe, D. K., 5123.

Nystrom, R. F. See Oppermann, R. A., 2113.

Oates, J. A. See Sjoerdsma, A., 3426.
Oberthin, H. See Kallmann, S., 3651.
Obolonchik, N. V. See Kielner, K. E., 3716.
Obotova, M. N. Determination of isomers in technical tritolyl phosphate by means of partition

chromatography, 3824.
Obrenović, I. D. See Dizdar, Z. I., 3731.
Obrink, K. J., and Ulfendahl, H. R. Gamma spectrometry for analysis of mixtures of radioisotopes in biological and medical research, 2586.

Obst, K.-H., and Malissa, H. De water in metallurgical slags, 4294. Determination of

Obtemperanskaya, S. I., and Likhosherstova, V. N. Quantitative micro-determination of boron in organic compounds by ignition in oxygen, 4316:

 See also Terent'ev, A. P., 2295.
 Ochsenfeld, W. See Jangg, G., 3227.
 Ochynski, F. W. Absorptiometric determination of phenol, 5296. Ocker, H. D., and Rotsch, A. Quantitative deter-

mination of thiols as a constituent of the volatile aromas of bread and baked goods, 1562.

O'Connor, R. T. See McCutchon, M. A., 1577. Oda, N., Katayama, N., and Endo, K. Determination of oxygen and hydrogen in titanium. II. Vacuum fusion method, 435.

- Tsunoo, S., and Hashimoto, T. Quantitative spectrochemical determination of silicon and vanadium in titanium tetrachloride, 437.

O'Dell, M. S. See Friedberg, F., 2894.

O'Doherty, D. See Papadopoulos, N. M., 4961. O'Donovan, D. G., O'Leary, U., and Reilly, J. Carotene content of Ulex europaeus (common

furze), 782.

Ochme, F. Dielectric determination of the residual water content of inorganic fertiliser salts, 787. Dielectric constants as characteristic analytical values, 859. Determination of the water content of pyridine bases by dielectric measurements and by the use of molecular sieves for differential drying, 2816. Dielectric measurements for structure determination and quantitative analysis. 4102.

Oelschläger, W. Spectrophotometric determination of traces of tin in biological and other materials,

Oër, A. von. See Fromm, D., 4135. Oertel, A. C. Trace-element status of large areas of soil, 285.

Oertel, G. W., and Eik-Nes, K. B. Purification of paper extracts in the quantitative determination of steroids, 234.

 Weiss, S. P., and Eik-Nes, K. B. Determination of progesterone in human blood plasma, 238. Oesper, P., and Pauerstein, C. J. Volumetric method

for serum sodium, 4897

Ogata, H., and Horoi, K. Determination of calcium and magnesium. II. Colorimetric determination of traces of magnesium with Xylidyl blue II [3-hydroxy-4-o-hydroxyphenylazonaphth-2':4'xylidide], 34. Ogawa, K. See Musha, S., 1000.

Ögiya, S., and Kataoka, H. N-Glucuronides of sulphonamides. I. Separate determination of a mixture of the N-glucuronides of sulphonamides and other glucuronic acid conjugates, 3414.

and other gucuronic acid conjugates, 52
Ohashi, S. See Kakemi, K., 3476.
Ohki, H. See Akasu, F., 689.
Ohkura, Y. See Momose, T., 571, 3876.
Ohloff, G. See Petrowitz, H. J., 5308.
Ohlson, R. See Smith, B., 1780.
Ohlweiler, O. A. See Alcides Ohlweiler, O.
Ohsbira T. See Sugnki, 3, 3904

Ohshima, T. See Suzuki, S., 3904.
Oi, N. Spectrophotometric determination of pal-

ladium with quinoline-2-aldoxime, 4292.

Oishi, H. See Iritani, N., 102.

Oja, O., Peltonen, R. J., and Koski, M. Determination of methanol in ethanol with Schiff's reagent,

Okáč, A., and Sommer, L. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, Photometric titanium reactions with polyhydric phenols, 2031.

Okada, H. See Ishida, T., 2779. Okada, M. See Nakai, T., 442, 1694. Okamoto, J., Kakuta, M., Morito, N., Nakajima, Y., Tsuyama, H., and Onuki, H. Isotopic analysis of zinc with a mass spectrometer, 3648.

Okashita, H. See Shinagawa, M., 1738.

Okawara, R. See Brown, M. P., 5292.
Oke, K. P. See Athavale, V. T., 3698.
Okhanova, L. A. See Kuznetsov, V. I., 3675.
Okken, R., and Haas, F. H. de. Assay of succinyl-

choline chloride in aqueous solution, 1904. Okun, D. A. See Maney, K. H., 4022.

Okura, Y. Determination of aluminium nitride in steel with methanolic bromine, 4279.

Olcott, I. See Wharton, F. D., jun., 1945.

Oldfield, J. F. See Carruthers, A., 5478.
Oldfield, J. H., and Bridge, E. P. Spectrographic method for the analysis of high-purity acids, 4110. O'Leary, U. See O'Donovan, D. G., 782. Olempska, Z. See Buchowski, H., 188.

Olenovich, N. L. See Grigorenko, I. N., 4146.
Olivari, L., and Benassi, R. Determination of sodium and potassium in potable waters by flame photometry, 5474.
Oliveira Meditsch, J. de. See Alcides Ohweiler, O.,

Oliver, G. D. See Lee, E. H., 3048. Oliver, J. A. See Wood, D. F., 952. Oliver, J. P. See Seely, G. R., 3322.

Ollero Gómez, A., and Paneque Guerrero, A. Determination of peroxidase in tobacco, 694.

Olmedo, R. G. See García Olmedo, R. Olsen, E. D. See Blaedel, W. J., 2025. Olsen, R. R. See Clifford, A. F., 2805, 4803.

Olson, D. G. Quantitative y-ray spectrometric analysis of nuclide mixtures: consecutive standard sources nullification, 3125.

Olson, E. C., and Alway, C. D. Automatic recording of derivative ultra-violet spectra. Application in steroid structure determination, 5106.

Olson, T. J. See Farrington, P. S., 1951. Olubajo, F. O. See Jeffay, H., 4906. Olver, J. W., and Hume, D. N. Polarography of lead in hydroxide and cyanide media, 929. Olya, A. See Morris, D. F. C., 5217.

Omori, H. See Fujita, F., 2348. Omori, T. See Fukuda, T., 4562. O'Neil, R. L., and Suhr, N. H. Determination of trace elements in lignite ashes, 3365.

O'Neill, H. J. See Dupraw, W. A., 77. O'Neill, W. R. See Griffing, M. E., 4866.

Onishi, T. See Kamada, M., 990. Ono, K., and Isono, Z. Analysis of kraft liquors. II. Precipitants for sulphide, 2335.

Ono, S. I. See Nakaya, J.-I., 4339. Onrust, H. Identification of synthetic dyes employed for colouring foods, 3509.

Onstott, E. I. Separation of rare-earth elements at

amalgam cathodes. III. Separation of samarium from gadolinium, 918. Separation of the lan-thanides at amalgam cathodes. III. Electrochemical fractionation of the lanthanides at a lithium amalgam cathode, 3173.

Onufrienok, I. P., and Aksenenko, V. M. Determination of tellurium in lead - antimony - tellurium

alloys, 3218.

Onuki, H. See Okamoto, J., 3648. Oosting, M. Extraction equilibria. I, 3034; II, 3550; III, 4044.

Opieńska-Blauth, J. Aminoaciduria investigation,

1856. Oppermann, R. A., Nystrom, R. F., Nelson, W. O., and Brown, R. E. Use of tertiary alkyl primary

C₁₂ to C₁₄ amines for the assay of ¹⁴CO₂ by liquid scintillation counting, 2113. Ordnung, W. See Schön, H., 4922. Orestova, V. A. See Sokolova, N. V., 2255. Orient, O. See Dutka, F., 2112.

Oriol-Bosch, A. See Schmid, O. J., 1153. Orlova, L. M. Separation of cobalt from manganese

by means of nitroso-R salt on an ionite, 148.

Orme, G. See Mitchell, G. P., 826. Oró, J. F. See Zlatkis, A., 4425. Orsini, F. See Pien, J., 4236.

Orsós, S. Effect of thorium on the determination of uranium with morin, 1736.

Ortega, M. Nigrosine for dyeing proteins in electrophoresis on filter-paper, 678.

Ortenzio, L. F., and Stuart, L. S. Behaviour of chlorine-bearing organic compounds in the A.O.A.C. available chlorine germicidal equivalent concentration test, 1976.

Ory, H. A. Infra-red absorption frequencies of the tert.-butoxy group, 4816.

Ory, R. L., Bickford, W. G., and Dieckert, J. W. Glass-fibre-paper chromatography of the longchain fatty acids, brominated derivatives and methyl esters, 1576.

Orylska, K. See Basińska, H., 2692. Orylski, Z. See Basińska, H., 2693, 5210. Osawa, Y. See Tsuchiya, A., 2324. Osborn, E. M. See Tuck, B., 4517.

See Fujimoto, R., 2924. Ose, S. See Fujimoto, R., 2924.
Osika, L. M. X-ray diffraction determination of

boron in boron carbide, 908.

Osiko, E. P. See Brudz', V. G., 3169.

Osman, F. A. See Amin, A.-A. M., 149, and El Raheem, A. A. A., 2043, 3120.

Osman, M. See Korkisch, J., 2673, 3224.

Osmond, R. G., Owers, M. J., Healy, C., and Mead, A. P. Determination of radioactivity due to caesium, strontium, barium and cerium in waters and filters, 283.

Osol, A. See Gennaro, A. R., 243.

Ossowski, B. See Kallistratos, G., 4177.

Ostasheva, M. I. See Vyakhirev, D. A., 1089. Oster, G. See Joussot-Dubien, J., 4650. Oster, H. Gas-chromatographic analysis, 3044.

Österlind, S. Polarographic determination of

oxygen in blood in vivo, 2355.

Osterud, T., and Prytz, M. Polarographic determination of hydroxylamine alone and in comparison

with hydroxynamine alone and in comparison with hydroxamic acid(s), 3198.

Osteryoung, R. A. See Knight, W. S., 587, and Van Norman, J. D., 4645.

Ostrovskaya, G. V. See Zaidel', A. N., 869.

Ota, K., and Mori, S. Rapid spectrophotometric determination of lead in free authing steel. 524.

determination of lead in free-cutting steel, 534.

Ota, N. See Hamaguchi, H., 5347. Otake, Y. The determination of oxygen in metallic zirconium by the vacuum fusion and the bromination - carbon reduction methods, 441.

Otero, C. See Hidalgo, A., 5300.
Otero de la Gandara, I. J. L., and Gispert Benach, M.
Determination of heavy water in concentrations approximating to that in natural water, 1185.

Otomo, M. See Tonosaki, K., 489, 4252. Ottenbrite, R. M. See Thibert, R. J., 3908. Ottendorfer, L. J. Indirect titrimetric determination

of zirconium and hafnium in their oxide mixture,

See also Belcher, R., 5144.
 Otto, K., Uhlif, M., and Peša, J. Determination of water in "anhydrous" hydrofluoric acid, 3736.

Ovakimyan, G. B. See Golosova, L. V., 4848.

Ovanesian, A. See Spacu, P., 1256.
Ovchar, L. A. See Poluektov, N. S., 5503.
Ovchinnikov, G. V. See Yashchenko, M. L., 871.
Ovenfors, C. Chromatographic separation of niacin [nicotinic acid] and its derivatives on a preparative scale using the ChroMax column, 5462.

Owades, J. L. See Brenner, M. W., 3996, and Gimbel, L. S., III, 2982.

Owen, A. G., and Price, W. J. Aluminon reagent solution, 4630.

Owen, L. E. Ignitor unit for d.c. arcs, 4077.
Owens, E. B. Spectrochemical analysis of high-purity gallium, 2098.

Owens, T. P., and Malowan, L. S. Estimation of N1-p-chlorophenyl-N5-isopropyldiguanide [proguanil] by use of a modified Sakaguchi reaction,

Owers, M. J. Concentration by electrodialysis of caesium and strontium radioactivities in water, 1956.

- See also Osmond, R. G., 283.

Oxley, J. E. See Hills, G. J., 4601.
Oxley, T. A., Pixton, S. W., and Howe, B. W.
Determination of moisture content in cereals. Interaction of type of cereal and oven method,

Özeris, S. See Baykut, F., 583.
Oziraner, S. N., Gaziev, G. A., Yanovskii, M. I., and
Kornyakov, V. S. Ionisation detector with promethium-147 for gas chromatography, 1998.

P

Paaby, P. Determination of water in serum, 4394. Pacak, J., and Cerný, M. Condensation of sac-charides with carbonyl compounds in the presence of ethyl metaphosphate, 3308.

Pacewska-Szlemińska, I. See Łada, Z., 1304. Pack, A., and Zischka, B. Experience with direct-recording spectrographs in the steel-works

laboratory. I., 1755.

Packman, G. See Bryant, F. J., 2031.

Padget, G. See Thompson, H. V., 1674.

Padhye, M. P., and Viladkar, B. G. Spectral studies of halogenated benzaldehydes. I. Vibrational spectra of ortho-, meta- and para-chlorobenzaldehydes, 5302.

Padmoyo, M., and Högl. O. Adulteration of human milk with cows' milk by paper electrophoresis,

Pagani, B. See Nebbia, L., 2802, 2815.
Page, A. J. See Beamish, F. E., 5125.
Page, J. O., and Gainer, A. B. Determination of titanium and iron in titaniferous materials by

cerate titrimetry, 1319.

Paige, J. L. See Hume, D. N., 1195.
Paille, M. M. See McCarthy, T. E., 4429.
Paixao, L. M., and Yoe, J. H. Spectrochemical determination of magnesium, chromium, nickel, copper and zinc in human plasma and red cells, 1108.

Pak, E. A. See Tarasevich, N. I., 2205. Pakhomova, K. S., and Volkova, L. P. Polarographic determination of microgram amounts of rhenium,

Pakulak, J. M., jun., and Leonard, G. W. Thermistorised apparatus for differential thermal analysis. Application for determination of thermograms of nitrate esters of cellulose and pentaerythritol, 321.

Pakulyak, Z. V. Gas analyser for determining the components of a gaseous mixture, 3027.

Paladini, A. C., Braun-Menéndez, E., Frade, I. S. del, and Marsani, Z. M. Determination of angiotensin in blood, 213.

Palágyi, T. Determination of uranium by chromato-1. graphy. Paper-chromatographic method, 5230; II. Determination by column chromatography, 5230.

Palatnik, I. I. Determination of calcium oxide in fluxed agglomerate on the stylometer, 1283.

Palaty, V. Determination of sulphate, 4233.
Palatzky, W. Spectrophotometric determination of iron in titanium dioxide, 1353.

Paleg, L. G. Citric acid interference in the estimation of reducing sugars with alkaline copper reagents, 2770.

Palei, P. N. See Gusev, N. I., 3096, Kabanova, O. L., 3733, and Byabchikov, D. I., 2711, 4250.
Palgrave, J. A. See Bender, A. E., 1860.
Pallaget, C. See Delga, J., 3465.
Pallière, M. See Martin, F., 5052.
Palmby, A. K. See Smith, G. W., 2823.

Palous, R., Pavelka, V., and Mara, M. Colorimetric determination of potassium with dilituric acid.

See also Pavelka, V., 3586.

Pan, K., Cheng, Hwasheng, and Lee Y .- T. Separation of strontium from barium ions by paper electrochromatography, 2080. Pan. S. C. Spot detection on paper chromatograms

with iodine vapour, 1608.

- and Wagman, G. H. Maver's reagent as a spray reagent for detecting alkaloids on paper chromatograms, 1536.

Panak, H. See Koter, M., 5351.
Pancaldi, G. See Bighi, C., 473.
Panchenkov, G. M., Kuznetsova, E. M., and Kaznadzei, O. N. Single-stage enrichment factor in the separation of lithium isotopes by ion exchange, 3131

See also Gorshkov, V. I., 2065.

Panconesi, E., and Mantellassi, G. Electrophoresis

on a separable column, 823.

Pande, C. S., and Srivastava, T. S. Analytical aspects of some organic acids. III. Gravimetric determination of thorium by m-phenylenedi(oxyacetic acid), 446; IV. Direct complexometric titration of ironIII with EDTA, with 3-hydroxy-2naphthoic acid as indicator, 4268; V. Back-titration procedures for the determination of aluminium, zirconium and thorium with ironIII solution and 3-hydroxy-2-naphthoic acid as indicator, 4653.

Pandolfo, L., and Di Chiara, G. Separation and determination of glucosaminic acid by column

chromatography, 2387.

Panek, A. Detection of enzymes by paper chromatography, 2414.

Paneque Guerrero, A. See Ollero Gómez, A.,

Panfilov, V. N. See Efremov, V. Ya., 3303. Pankaskie, J. E. See Earle, N. W., 1973.

Pantani, F., and Piccardi, G. Spectrophotometric determination of noble metals with tin^{II} in bromide solutions, 4791.

Pantazoplos, G. See Langer, S. H., 4350. Panusz, H. See Skarzyński, J., 203. Paoloni, L., and Marini-Bettolo, G. B. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Characterisation of the carbonyl group through complexes with mercuric chloride and cadmium chloride, 2031.

Papadopoulos, N. M., and Hess, W. C. Determination of neuraminic (sialic) acid, glucose and

fructose in spinal fluid, 4926.

- Hess, W. C., O'Doherty, D., and McLane, J. E. Procedure for the determination of cerebrospinal fluid, total protein and gamma-globulin in neurological disorders, 4961.

Papafil, E., Papafil, M., Furnica, D., and Furnica, M. Gravimetric determination of copper NN'N"N"-tetraphenyloxamidine, 372

Papafil, M., Furnica, D., and Hurduc, N. Colorimetric determination of copper by means of NN'N''N''-tetraphenyloxamidine, 4124.

and Kleinstein, A. Colorimetric micro-determination of iron, 4266.

See also Papafil, E., 372.

Pápay, M. K. See Mázor, L., 2933.
Papoff, P., Grifone, L., and Zuliani, G. Polarographic apparatus with triangular sweep and variable speeds with synchronised pen recorder,

Pappenhagen, J. M., and Looker, J. J. Reduction methods for the determination of nitrates,

Paraskevopoulos, N. See Manno, R. P., 312.
Parok, C. See Samuelson, O., 3317.
Pardun, H., and Werber, O. Determination of refining losses of oils and fats, 2995.

Parellada, R. See Capitán, F., 2031.
Parenteau, J. P. See Truchement, J. L., 5271.
Pariaud, J. C. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Metallic complexes and chelates of 2: 4-dihydroxy-

acetophenone, 2031.
- and **Tissier, C.** [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Copper complexes of phenyl-2-pyridyl-

methanol, 2031.

Parikh, P. M., and Mukherji, S. P. Estimation of tolbutamide, 257. Determination of saccharin. 3974. Bromimetric estimation of methocarbamol. 4461

Vadodaria, D. J., and Mukherji, S. P. Colorimetric estimation of dithranol [1:8-dihydroxy-

anthranol], 726.
Paris, J. M. F. See Fernández Paris, J. M.

Paris, R., and Durand, M. Photometric determina-tion of the anthraquinone components of alder buckthorn, 4456.

and Rousselet, R. Characterisation of colouring matters of vegetable origin by means of paper chromatography, 741.

and Thomas, G. Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Chelates of picolinic acid, 2031.

Park, T. O. See Williams, A. F., 4093. Parker, A. See Booth, E., 1673. Parker, C. See Mott, R. A., 2822.

Parker, C. A. Raman spectra in spectrofluorimetry,

1214 and Barnes, W. J. Spectrofluorimetry of

lubricating oils: determination of oil mist in air, 3841

Parker, H. R. Saponification cloud test for beeswax. 4393.

Parker, W. H. Determination of sugar in sugar beets. V. Automation in tare-laboratory procedure, 2445.

Parker, W. W. See Menville, R. L., 2757.
Parkes, J. See Alexander, J. G., 3440.
Parkin, B. A., and Hedrick, G. W. Chromatographic fraction collector, 804.

Parratt, L. G., Porteus, J. O., Schnopper, H. W., and Watanabe, T. X-ray absorption coefficients and geometrical collimation of the beam, 839.

Parrish, D. B. Study of the method for vitamin A in mixed feeds, 4529.

See also Shellenberger, T. E., 4123.

Parry, E. P. See Schluter, E. C., jun., 4865.

Parsons, Sir Howard Grubb, & Co., Ltd. Grating spectrometers or analysers, 2000.

Partashnikova, M. Z. See Nikitina, E. A., 923. Pascal, H. See Aubertein, P., 5335. Pasher, I. See Baker, H., 1125, 3884.

Pasovskaya, G. B. Determination of chloride ion by conductimetric titration with mercuric nitrate solution, 1742. Conductimetric determination of copper, 5150.

Paspová, Z. Polarographic determination of histidine in the presence of leucine and methionine,

Pássera, P., Garzón Ruipérez, L., and Salas Sanceledonio, J. Gravimetric determination of silica,

Pasztor, L., Bode, J. D., and Fernando, Q. Determination of micro quantities of boron in steel by a solvent-extraction method, 4277.

Patchan, J. F. See Matthews, J. S., 193.

Patchett, G. G., and Batchelder, G. H. Determination of Trithion crop residues by cholinesterase-

inhibition measurement, 4537.

Patchornik, A., and Rogozinski, S. E. Non-aqueous titration of organic acids, anhydrides, acyl halides, strong inorganic acids and reactive alkyl halides in various mixtures, 581.

Pátek, V. See Jeník, J., 3794, 5261.
Patel, A. A., and Patel, J. L. Determination of adrenochrome monosemicarbazone, 2928.

Patel, C. C., and Vishweshwaraiah, K. N. Potassium phosphate as a reagent for the gravimetric estimation of lithium, 4118.

See also Vishweshwaraiah, K. N., 872.

Patel, J. L. See Dave, J. B., 2439, and Patel, A. A.,

Patki, S. J. See Beckett, A. H., 729.

Patnaik, D. See Singh, K., 3727, 3728. Patrovský, V. Chelatometry. XLIV. Determination of yttrium in mixtures of yttrium earths, 2651. Determination of several elements by the

use of the Zeiss-Jena flame photometer, 4573.

Patterson, H. M. See Smith, W. T., jun., 5125.

Patterson, J. H. See Evans, H. B., 4720.

Patterson, S. J., and Buchan, J. L. Dextrose and

maltose contents of commercial liquid glucose, 3983.

Patton, S. See Day, E. A., 603.
Patwardhan, V. M. See Lal, J. B., 4877.
Paty, M. See Deschamps, J., 2031.
Patzek, T. Detection of peroxides on filter-paper,

Pauerstein, C. J. See Oesper, P., 4897. Paul, J., and Pover, W. F. R. Colorimetric determination of silicon in the presence of phosphorus, 4187

Paul, R. C., Singh, J., and Sandhu, S. S. Visual titrations in non-aqueous solvents with crystal violet as an internal indicator, 1247. Visual titrations in non-aqueous solvents with benzanthrone as internal indicator, 1651.

Paulig, G. Determination of Alodan residues in grain, 1977.

Paulik, F., Erdey, L., and Takacs, G. Derivatographic investigation of powders and granulated pharmaceutical preparations, 2444.

Paulin, P. Detection and determination of carbon

monoxide in an atmosphere, 5471. Paulsen, T. M., Holt, K. E., and Anderson, R. E. Determination of water-dispersible protein in soya bean oil meals and flours, 5014.

Paulson, R. A. See Wood, L. A., 4387.
Paulssen, R. B. See Waaler, T., 1905.
Paunović, M. M. See Tutundžić, P. S., 4658, 5246.
Paunović, N. M. See Tutundžić, P. S., 5246.

Pavan, E. See Caprioli, G., 1779, and De Vita, M.,

Pavelka, V., and Palous, R. Parallel potentiometric titrations. V, 3586.

- See also Palous, R., 3627.

Pavlenko, L. I. See Vainshtein, É. E., 1340.
Pavliková, M., and Zýka, J. Quinol and similar reducing agents. XIV. Reductimetric deter-

mination of copper with quinol, 4127.

Pavlov, V. N. See Strel'nikova, N. P., 5225.

Pavlova, N. A. See Shvedov, V. P., 2676.

Pavlova, P. S. See Zhukhovitskii, A. A., 3354.

Pavlů, J., and Sula, J. Determination of 3:4benzopyrene and arsenic in cigarette smoke, 4997.

Pawelczak, I. See Ellert, H., 255.
Pawelkiewicz, J., Walerych, W., Friedrich, W., and
Bernhauer, K. Application of cellulose ionexchangers and alginic acid to the chromatographic purification and separation of the vitamins of the B12 group, 5463.

Pawlak, M. S. See Barnes, L., jun., 2766.
Pawley, J. A. See Secrest, P. J., 3834.
Payne, J. H., jun. See Power, W. H., 44.
Paysant, P. See Biserte, G., 3901.
Payza, A. N., and Mahon, M. E. Spectrofluorimetric estimation of adrenochrome in human plasma,

1129. Spectrofluorimetric determination of aminochromes in human plasma, 3894.

Paz Castro, M. See Bermejo Martinez, F., 1667, 2236, 3711, 4649.

Pazdera, H. J. See Missan, S. R., 3948.
Pazumova, V. P. Determination of small amounts of cadmium. I. Separation of cadmium from zinc with hydrogen sulphide, 4149; II. Photometric determination of cadmium with cadion, 4149; III. Determination of cadmium with cadion in the presence of other ions, 4149.

Peaker, F. W. Light-scattering methods for the chemical characterisation of polymers, 5324.

Pearce, J. H., and Mardon, P. G. Apparatus for combined thermal analysis and dilatometry, 3582.

Pearl, I. A., and McCoy, P. F. Stable diazo salts for chromatographic spray reagents, 4052.

Pearse, G. A., jun., and Pflaum, R. T. Spectro-photometric determination of cobalt and nickel with oxamidoxime, 4287.

Pearson, W. N., Brodovsky, E. R., Carnes, E. B., and Darby, W. J. Ultra-micro method for assay of pteroylglutamic acid (folic acid) activity, 763.

Pease, B. F., and Williams, M. B. Spectrophotometric investigation of the analytical reagent 1-(2-pyridylazo)-2-naphthol [PAN] and its copper chelate, 2

Pećar. M. Devices for micro-titration, 3544.

Pečený, R., and Nedvědová, V. Polarographic determination of the elementary and sulphide sulphur in viscose fibres, 4885.

Pechanec, V. See Horáček, J., 4304. Pecherskaya, Yu. I., and Pevtsov, G. A. Spectrographic determination of calcium, silicon, barium, potassium and rubidium in high-purity sodium iodide, 996.

Peck, L. C., and Tomasi, E. J. Determination of chlorine in silicate rocks, 3241

Pecsok, R. L. See Farrington, P. S., 1951.

Pedicini, S. See D'Alessandro, B., 3449.
Pedinelli, M. Determination of manganese in petrol, 3838.

Pedos, F. Z., Sventitskii, N. S., and Shlepkova, Z. I. Low-voltage pulse discharge in vacuo to obtain spectra, 2546.

Peekema, R. M., and Scott, F. A. Determination of plutonium in irradiated uranium fuel solutions by controlled-potential coulometry, 987.

Peer, H. G. Reaction of phenol with formaldehyde. I. Separation and quantitative determination of low-molecular-weight reaction products by paper

chromatography, 1807.

Peereboom, J. W. C., and Roos, J. R. Chromatography of sterols and its application to the detection of animal and vegetable fats in the

presence of each other, 4491.

Peeters, H., and Vuylsteke, P. Two-dimensional electrophoresis, 4064.

Vuylsteke, P., and Noë, R. Ionophoretic pattern in two-dimensional electrophoresis, 822.

Peisach, M. Routine counting of carbon-14, 2657. Peizker, Z. Use of N-ethylmaleimide for the colorimetric determination of amino acids, 5367.

— See also Mádlo, Z., 1142.

Pelzulaev, Sh. I. See Karabash, A. G., 2641.

Pelikán, J. B. See Čupr, V., 1233.

Peka, I. See Malý, J., 5239.

Pellecer, A. See De Vries, J. E., 3323.
Pellerano, C. See Franchi, G., 5001.
Pellerin, F. Acidimetry in non-aqueous medium.

II. Techniques and applications, 8.

Pelletier, O., and Campbell, J. A. Modified procedure for the determination of niacin [nicotinic acid] in cereal products, 1947.

Pelloni, V. See Sterescu, M., 4999.

Pelt, J. G. van. Thermistors in the ebullioscopic

determination of molecular weights, 1627.

Peltonen, R. J. See Oja, O., 2266.
Pelzová, H. See Horák, F., 1893.
Penceff, N. P. Methods for the micro-determination of potassium, 26.

Pender, H. W. Determination of aluminium as sodium fluoroaluminate, 51.

Pendergrast, J. See Jordan, J., 1629. Penick, A. E. See Elliott, J. W., 4915.

Penikett, E. J. K. Use of dropping-mercury electrode to estimate oxygen in dilute gels, 2579.

Penna-Franca, E. Determination of nitrogen in carbon steel, 1365. Determination of oxygen in steel, 1366.

- and Pinto Coelho, A. Determination of stront-ium-90 in the bones of stillborn infants, 638.

Pepper, C. E. See Atwell, M. G., 335, and Barker. E. R., 335.

Pepper, L. See Zittle, C. A., 4849.

Perdok, W. G., and Boom, G. Eyepiece graticule

for measuring X-ray powder diffraction patterns,

Peregud, E. A., and Stepanenko, E. M. Determina-tion of very small amounts of ozone, 4228.

Pereira Crespo, V., Santos Veiga, J., and Pinto Coelho, F. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Quantitative determination of rutin and quercetin by radio-cobalt-60, 2031

Perepletchikova, E. M., Étlis, V. S., and Kalugin, A. A. Determination of 2-ethoxyethanol and accompanying water, ethanol and ethanediol,

4328

Pérez, F. P. See Pino Pérez, F. Perkin, J. L. See Coleman, R. F., 4137.

Perkin-Elmer Corp. Optical system for measuring refractive indices, 3577.

 Perkins, R. W. See Kirby, L. J., 3103.
 Perlès, R., and Colas, M. C. Microbiological determination of mesoinositol in blood. Normal and pathological variations, 3880.

pathological variations, 3880.

Perlia, X. See Büchi, J., 5005.

Pernarowski, M. See Chatten, L. G., 720.

Pernow, B. See Holmgren, A., 4395.

Perpar, M. See Kolšek, J., 186, 3827.

Perperot, H. Photo-electric densitometer, 831.

Perrin, C. H. Direct determination of available phosphorus in fertilisers by the quinolinium modividence and the production of the production molybdophosphate method, 1962.

Perrin, D. D. Spectrophotometric determination of iron as ferric acetate complex, 1002.

Perrine, A. W. See Harter, G. J., 938.

Perron, R., and Pourchez, A. Application of Boldingh's technique to the chromatographic separation of some neighbouring even and odd higher aliphatic saturated monocarboxylic acids,

Perrone, J. C. See Iachan, A., 672.
Perry, J. A. Quantitative infra-red analysis from published data, 164.

Perry, R. See Chance, B., 2556.

Pert, J. H., Engle, R. E., Woods, K. R., and Sleisenger,
M. H. Quantitative zone electrophoresis in starch gel, 4071. Peša, J. See Otto, K., 3736.

19-norsteroids and aetiocalciferols, 1524. 2:4-Dinitrophenylhydrazine, a suitable reagent for the colorimetric determination of carbonyl compounds, 2276.

Pesez. M. Halochromy and halofluorescence of

and Bartos, J. Determination of glyoxylic acid with resorcinol and its relevance to periodate

oxidation, 4334.

and Burtin, J.-F. Reduction by borohydrides. in the presence of certain metals, of nitriles, and nitro or nitroso aromatic derivatives. Application to analysis, 5307.

— and Legrand, M. Organic analysis, 4296.

Peshkova, V. M., Mel'chakova, N. V., and Urazekova,
A. B. Spectrophotometric method for the determination of zirconium with mandelic acid,

4718. Pesis, A. S., and Bitovt, Z. A. Determination of palladium with 2-hydroxy-1-naphthaldehyde,

5256.

Peters, H. Ultra-violet absorption spectra of phthalic anhydride and related substances. Analytical method for naphthalene and 1:4naphthaquinone, 1441.

Peters, O. See Körber, K., 2513.
Petersen, D. F., and Murray, A., III. Fluorescent intensification screen for ultra-violet scanner cameras, 5081.

Petersen, K. See Assarsson, G. O., 5156.
Peterson, H. T., jun. Separation of uranium and bismuth with ion-exchange papers, 981.

Petho, A. See Torok, T., 5500.

Petránek, J., Večeřa, M., and Jureček, M. Identification of organic substances. XXXI. Identification of sulphides, 3321.

Petras, D. A. See Steyermark, A., 3288. Petrascu, S., Grou, E., and Ballif, G. Analysis of

phenoxyacetic acid compounds, 5051.

Petroscu, M. See Buzincu, J., 430.
Petri, H. R. See Bergner, K. G., 5024, 5433.
Petrocelli, J. A., and Lichtenfels, D. H. Determination of dissolved gases in petroleum fractions by gas chromatography, 3361.

gas chromatography, 3361.

Petrov, A. A. See Zaidel', A. N., 2615.

Petrov, A. K. See Egorov, Yu. P., 2755.

Petrov, A. K. See Glebovskaya, E. A., 2260.

Petrov, G. S. See Lukin, A. M., 4710.

Petrova, E. I. See Dobkina, B. M., 2178.

Petrova, L. N., and Novikova, E. N. Determination of althydoes by the method of survive formation.

of aldehydes by the method of oxime formation,

575. Novikova, E. N., and Skvortsova, A. B. Determination of carbonyl compounds by reaction with amines, 573.

See also Bugorkova-Zelenetskaya, A. A., 558, 2747.

Petrova, T. V. See Kuznetsov, V. I., 2105.

Petrov-Spiridonov, A. E. Separation of potassium, sodium, calcium and magnesium ions by paper

chromatography, 3626.

Petrowitz, H. J., Nerdel, F., and Ohloff, G. Gas partition chromatography of stereoisomeric menthols, 5308.

Petruccioli, G. Detection of grape-seed oil in olive

oil by paper chromatography, 1940.

Petrushin, I. F. See Borovskii, I. B., 449.

Petterson, L. L. See Hunter, D. L., 3661.

Pettinati, J. D. See Haugaard, G., 2453.

Pettit, L. D. See Irving, H., 3028. Petz, K. See Lux, H., 3117.

Peurifoy, P. V., Slaymaker, S. C., and Nager, M. Tetracyanoethylene as a colour-developing reagent for aromatic hydrocarbons, 2300.

Pevtsov, G. A. See Pecherskaya, Yu. I., 996.

Pevzner, K. S. See Chernikov, Yu. A., 96.
Pfau, A. See Kallistratos, G., 4177.
Pfeifer, V., and Hecht, F. Extraction of uranium, 4759.

Pfeiffer, H. G. See Liebhafsky, H. A., 5125, and Zemany, P. D., 3065.

Pfeil, E., Baier, A., and Balzer, O. Paper-chromatographic detection of glucose, fructose and mannose in mixtures, 572.

Pflaum, R. T. See Pearse, G. A., jun., 4287. Pharmaceutical Society of Great Britain and Society for Analytical Chemistry. Determination of the capsaicin content of capsicum and its preparations, 2432. Assay of crude drugs. Determination of rotenone in rotenone-bearing plants with special reference to lonchocarpus, 3470.

Philcox, H. J. Rotating disc electrode for spectro-

graphic analysis of solutions, 5101.

Philipp, B. Determination of the residual xanthate

in regenerated cellulose threads, 2846.

Philippu, A. J. Separation of galactose, glucose and lactose in urine by paper chromatography, 2368. Quantitative determination of reducing sugars after separation by paper chromatography, 2369. Paper-chromatographic method for lactase and maltase activity determination, 3931.

Phillips, G., and Foster, E. Chemical analysis of ternary alloys of plutonium with cobalt and cerium, 121.

 See also Slee, L. J., 2213.
 Phillips, J. P. Use of the Beckman DU spectro-photometer in the 1-0 to 1-9-micron range, 2008

Phillips, S. L., and Morgan, E. Polarography of mixtures. Simultaneous determination of iron and nickel, 1750.

Philpotts, A. R., and Maddams, W. F. [International Symposium on Microchemistry. Birmingham, Quantitative analysis in the infra-red,

Phipps, C. W. See Vita, O. A., 975. Piacenti, F. See Califano, S., 190.

Pripps, c. W.

Piacenti, F. See Califano, S., 190.

Piazzi, M. See Bovalini, E., 1357, 1426.

Pibarot, R. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.]

Pure and Applied Chemistry. Determination of vinyl cyanide monomer in its polymers and copolymers, 2031.

picard, K. See Jordan, K., 4745.
Piccardi, G. See Pantani, F., 4791.
Picchioni, A. L. See Cole, J. R., 1199.
Piccoli, P. See Vecchione, C., 2361.
Pichat, L. See Lefebvre, M., 2031.
Pickard, P. L., and Iddings, F. A.

Titration of ketimines in glacial acetic acid, 1071.

Pièce, R. Determination of calcium sulphate in gypsum and gypsum plaster by ion exchange, 2635.

Piechocka, J., and Nikonorow, M. Pepsin in the toxicological analysis of food products. Digestion of the material and detection of some heavy metals, 3978.

Piehl, F. J. See Powers, G. W., jun., 1821. Piekarski, L. See Krauze, S., 2843. Piela, W., Podgłódek, T., and Winczakiewicz, A.

Determination of β - and γ -cellulose in rayon cellulose pulps, 198.

Pien, J. Alginates in dairy products, 739. Standardisation of butyrometers for milk, 5018.

Desirant, J., Orsini, F., and Avril, P. Micro-determination of selenium with 3:3'-diaminobenzidine, 4236.

Lefebvre, B., and Frêne, A. Detection of rennet in "entremets", 3986.

Piensar, W. J. Spectrochemical method for the analysis of plant material, 5044.

Pieper, J. Paper electrophoresis of proteins, 3438. Pierce, T. B. Determination of trace quantities of silver in trade effluents, 5043.

Pierrain, J. Automatic apparatus for the detection and recording of oxides of nitrogen in coke oven gas, 3367. Recording apparatus for traces of oxygen, 4571.

Pierson, R. H. See Fletcher, A. N., 1103.
Pietrzak, I. See Nowicka-Jankowska, T., 498.
Pietrzyk, D. J. See Fritz, J. S., 916.
Pietschmann, E. Paper-chromatographic de

Paper-chromatographic determination of small amounts of fatty adulterants of the coconut oil group in chocolate and its preparations, 2460.

Pietzka, G., and Chun, H. Flame photometry. I, 305.

Pijanowski, E. Determination of ash in the general analysis of cheese, 1175.

Pijck, J., Hoste, J., and Gillis, J. [International Symposium on Microchemistry, Birmingham, 1958.] Trace-element losses during mineralisation of organic material-a radiochemical investigation, 3102.

Pikaeva, V. L. Chromatographic separation of

aromatic carbonyl compounds, 596.

Pike, E. R., and Hughes, J. W. Monitored Geigercounter X-ray diffractometer with automatic recording, 824.

Pilar de la Maza, M. See Gracián, J., 3516. Pilipenko, A. T., and Obolonchik, A. T. Rhenium reaction with methyl violet. I. Extraction of the methyl violet complex of rhenium, 518. See also Zharovskii, F. G., 3209.

Pallai, C. S. See Subrahmanyam, P. V. R., 3532.

Pilleri, R., and Vietti-Michelina, M. Gas-chromatographic analysis of pyridine - nicotine mixtures,

See also Castiglioni, A., 5320. Pilloton, R. L. [Symposium on solvent extraction in the analysis of metals.] Convergence of tie lines in ternary liquid systems and its application to liquid extraction, 4643.

Pillsbury, H. C. See Deutsch, M. J., 4500, 4501.

Pimenta, A. A. S., and Silva Carmo, M. M. (Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.) Spectrophotometric study of the system iron¹¹¹ lactic acid, 2031.

Pinchas, S., Shabtai, J., Herling, J., and Gil-Av, E. Preparation and infra-red spectra of the three ethylcyclopentanes, methylene- and ethylidenecyclopentane, 2807.

Pinches, P. B. See Baumgarten, S., 20.
Pineiro, A. S. See Sampedro Pineiro, A.
Pinkus, A. G., and Waldrep, P. G. Method for obtaining melting-points of compounds reacting with moisture or oxygen, 1219.

Pino Pérez, F. See Burriel-Marti, F., 2031.
Pinto, C. M. See Mendonça Pinto, C.
Pinto, N. See Rappaport, F., 3926.
Pinto Coelho, A. See Penna-Franca, E., 638.
Pinto Coelho, F. See Pereira Crespo, V., 2031.
Pinxteren, J. A. C. van. Rapid photo-electric

colorimetric determination of fluoride, 3079. See also Fresen, J. A., 4025.

Piotrowski, S. See Hetnarska, K., 4320. Pipitone, V., and Russo, R. Determination of lysozyme. Fogelson's method, 2421.

Pire, J. See Hissel, J., 1959.

Pirtea, D., and Albescu, I. Determination of mercury in plant-protective substances, 1189. Pirvu, I. See Ripan, R., 1749.

Pisarev, V. D., and Vasil'ev, N. P. Spectrographic analysis of solutions on the stylometer ST-7,

Pittet, A. O. See Jones, J. K. N., 2274.
Pivovarov, V. M., Kirionova, L. A., Bobovich, Ya. S., and Tarkhov, G. N. Photo-electric recording of Raman spectra excited by the 5875-A line of a helium lamp, 5508.

Pixton, S. W. See Oxley, T. A., 3979.
Pizzoli, E. M. See Nebbia, G., 2882.
Plaetschke, H. Determination of sulphur trioxide in aluminium sulphate, 1337

Plaksin, I. N., Suvorovskaya, N. A., and Voskresen-skaya, M. M. Nephelometric determination of xanthates in solution, 1073.

Plana Eichberg, E. Extension of the Reich method. Determination of sulphur dioxide and sulphur

trioxide in mixtures, 2188.

Planta, C. von, Billeter, E., and Kofler, M. Application of proton resonance to the elucidation of structure and to the identification of natural and synthetic quinones with isoprene side-chains,

Planterose, D. N. See Slater, T. F., 4990 Plaquet-Schoonaërt, T. See Biserte, G., 3901. Plastinin, V. V. Spectrographic analysis of mica,

Plate, H. Determination of the hydrogen content of aluminium alloys with the "Telegas" apparatus,

Platek, J. See Zapiór, B., 1416. Plathe, R., and Beinroth, G. Spectrochemical determination of carbon in steel and grev cast iron, 3261.

Platte, J. A., and Marcy, V. M. Photometric determination of zinc with zincon. Application to water containing heavy metals, 901.

Pleasants, S. W., Haynes, C. M., and Harrow, L. S. Rapid spectrophotometric determination of total nicotine alkaloids in tobacco smoke. 1540.

Plein, E. M. See Sorby, D. L., 4902. Plesnivy, F. Determination of chlorides and fluorides in glass of high boron content, 2250. Potentiostat in analytical practice, 5122. Determination of some impurities in titanium dioxide.

Plessis, L. A. du. Carrier humidity in the gas chromatography of ammonia, 2685.

Pliss, A. M. See Stepin, V. V., 1334.

Pliva, J. See Horák, M., 3889.

Plocek, L. See Krejzová, E., 2096.

Ploquin, J., and Neau, C. Oxidation of glycerol with

periodic acid in the presence of boric acid, 4330.

Ploszyński, M. See Niewiadomski, H., 4376. Plotnikov, V. I. Ferric hydroxide for separating quadri- and sexa-valent selenium, 1723. Separation of selenium and tellurium, 2706.

Ploum, H. Burette for drop volumes of 10⁻³ ml, 795. Plowman, R. A., and Wilson, I. R. Polarographic determination of thiocyanate, 4699.

Pluchery, M. Quantitative analysis of the surface oxidation of uranium and uranium carbide powders by means of X-rays, 5238.

Pluchet, E. See Grand-Clement, A., 3102. Plummer, M. E. V., and Beamish, F. E. Fire-assay method for determination of platinum and palladium in ores and concentrates, 1032.

 Pobedina, L. I. See Elinson, S. V., 2142.
 Podaný, V. See Stankoviansky, S., 4675.
 Podchainova, V. N., and Loseva, G. G. ρ-Anisidine in chemical analysis. Reaction of copper ions with p-anisidine and the colorimetric determination of copper in nickel and zinc alloys and coloured glass, 4126.

Poddubnýl. V. I. Separation of saturated dicarboxylic acids by chromatography on silica gel,

Podeszewski, Z. See Drabent, Z., 1156. Podgłódek, T. See Piela, W., 198. Podgornyi, L. N. Analysis of natural waters, 5473

- and Bezler, F. I. Determination of bromine in natural waters, 1187.

Podleski, T. R. See Strickland, R. D., 1511, 1513,

Podmoshenskii, I. V., and Shelemina, V. M. Determination of the degree of absorption of analytical lines in arc and spark spectra, 2552.

Podol'skaya, V. I. See Shat'ko, P. P., 948.
Podolský, V., and Vizváry, E. Industrial use of pentachlorophenol and sodium pentachlorophenoxide and their determination in the atmosphere, 4019.

Poel, P. W. van der. See Asselbergs, C. J.,

Poethke, W., Gebert, P., and Müller, E. Precipitation of alkaloids and synthetic bases with Reinecke's salt. I. Alkaloids, 1886.

Pogosyants, E. K. See Nessonova, G. D., 1763. Pohl, F. A., Kokes, K., and Bonsels, W. Photometric determination of traces of boron in silicon,

Pohl. H. Photometric determinations of cobalt in aluminium and its alloys, 524. Comparative measurements with different colorimeters and photometers. Third addendum, 2011. Methods for the determination of manganese in steel, iron and ferromanganese, 2732

Pohloudek-Fabini, R., and König, K. Analysis of sympathomimetics. IV. The determination of ephedrine in pharmaceutical preparations by titration in a non-aqueous medium, 246.

Wollmann, C., and Wollmann, H. Chemistry and physiology of some metabolically important acids. III. Paper-chromatographic method for the detection of isocitric acid in plant materials, 2374.

See also Brockelt, G., 2841.

Pokorná, V. See Pokorný, J., 1825. Pokorný, J. Electronic methods. II. frequency titrations with a crystal-controlled oscillator, 4617.

Karvánek, M., and Pokorná, V. Determination of active oxygen in cosmetic emulsions containing zinc peroxide, 1825.

Pokrovskaya, I. E. See Brudz', V. G., 3169. Pol, A. van de. Determination of p-phenylenediamine in hair-dyes, 3848.

Pol, E. W. van der. See Hardon, H. J., 5056.
Pol, H. J. van der. Determination of the "bleeding number" of petrolatum, 3975.

and Rekker, R. F. Control of injections and other pharmaceutical preparations by means of u.v. spectrophotometry. V. Spectrophotometric

assay of atropine sulphate injections, 3947. Poláček, J. Automatic fraction collector for readily

flammable substances, 4047.

Polčin. J. Gasometric determination of ammonia in ammonium salts, 1706. Determination of ammonium ions in ammonium bisulphite and neutral sulphite cooking liquors. I, 2687; II, 2687.

Polej, B., and Strafelda, F. Glass electrodes for pH

measurements at high temperatures, 2582. Polezhaev, N. H. Determination of free silica in the

presence of silicates, 425.

Polissar, J. See Farlow, N., 5063. Polizu, A. Analysis of Pestox [schradan], 5059.

Polky, J. R. See Elo, A., jun., 4157.

Pollard, F. H., McOmie, J. F. W., and Nickless, G. Quantitative inorganic chromatography. Separation and determination of some heavy metals in admixture with lead. 348.

Pollerberg, J. See Heinerth, E., 1448.
Pólos, L. See Erdey, L., 2040, 2041, 2686.
Poltaeva, A. N. See Khristoforov, B. S., 932.
Poluéktov, N. S., and Kononenko, L. I. Determina-

tion of rhenium in molybdenite by a colorimetric method, 998.

and Nikonova. M. P. Flame-spectrophotometric determination of some rare-earth elements, 3176. Popova, S. B., and Ovchar, L. A. Flame

spectrophotometer with spectrum recording and its use, 5503.

See also Kononenko, L. I., 2131, 4190, and

Lauér, R. S., 59, 2180.

Polukarov, A. N. Determination of selenium and tellurium in gold-containing and platinumcontaining slurries, 2191.

- and Selyanina, O. K. Determination of antimony and arsenic in copper electrolytic slimes, 3203.

olyak, L. Ya. Quantitative determination of potassium, 2067. Photometric determination of Polyak, L. Ya. iron in bronzes not containing tin, 4784.

See also Busev, A. I., 1685.
Polyakov, V. P. See Bezugifi, V. D., 5282.
Pomeroy, J. S. See MacDonald, A., 3857.
Pommer, A. M., and Abell, J. F. Electrode holder for work in controlled attacks.

for work in controlled atmospheres, 1633.

Ponamareva, T. F. See Shat'ko, P. P., 948. Poni, M. See Cernâtescu, R., 2031.
Ponomarev, A. I. See Ageev, N. V., 3222.
Ponomareva, L. K., and Zolotavin, V. L. Deter-

mination of radioactive strontium in reservoir waters, 5042.

Pont. E. G. Chemistry of butter and butter fat, 5022

Popa, G., Negoiu, D., and Baiulescu, G. Colorimetric determination of cerium^{IV} in the presence of ironIII and lanthanumIII with o-dianisidine, 421. Colorimetric determination of palladium^{II} in the presence of platinum^{IV}, 1030. Determination of zirconium^{IV} with tartrazine by a polarographic titration method, 4205.

Popa, L. See Popper, E., 3634.
Popanda, G. See Weclewska, M., 427.
Popea, F. See Spacu, P., 438.
Popoff, A. Determination of copper in water-alcohol mixtures and spirits. II, 4490.

Popov, A. Foreign substances in foodstuffs. I.
The determination of copper in spirits using Wofatit F, 2472.

Popova, I. A. See Sapozhnikov, D. I., 3419.
Popova, N. M. See Zaslavskaya, L. V., 4281.
Popova, R. A. See Smirnov, B. P., 5036.
Popova, S. B. See Poluektov, N. S., 5503.
Popowicz, J. See Łukasiak-Wardzińska, H., 641.

Popper, E., Popa, L., Junie, V., and Roman, L. Gravimetric method for the determination of

silver, 3634. Proinov, L., and Craciuneanu, R. Gravimetric determination of copper with 5-anilino-2-mer-

capto-1:3:4-thiadiazole, 1267. Porath, J., and Flodin, P. Gel filtration: a method

for dealting and group separation, 803.

Porcellati, G. See Baker, R. W. R., 3897.

Porretta, A., and Bellucci, G. Determination of tin in preserved foods, 1558.

Porsche, F. W. See Yao, T. C., 3360. Porta, A. Spectrographic control of zinc-plating baths for steel strips by the Sendzimir process, 2084.

Porter, C. A. See Prill, E. A., 4478.

Porter, C. W., Clark, E. L., and Block, G. E. Separation and quantitation of three phenolic oestrogens by paper chromatography, 2412.

Porter, G. G. See Bean, R. C., 2768. Porter, R. S., and Johnson, J. F. Volatile liquid partition chromatography, 2534.

Porteus, J. O. See Parratt, L. G., 839. Porush, I., Thiel, C. G., and Young, J. G. Pressurised pharmaceutical aerosols for inhalation therapy. Physical testing methods, 4469.

Posener, L. N. See Cox, C. P., 737.
Pospelova, N. A. See Andreev, A. S., 3756.
Post, M. A., and Moore, W. A. Determination of chlorine dioxide in treated surface waters,

Potanova, T. I. See Spryskov, A. A., 3345. Potgieter, D. J. J. See Buys, G. S., 4032. Potratz, H. A. See Bate, G. L., 3776.

Potsepkina, R. N. See Bondarevskaya, E. A.,

Potter, E. C., and Everitt, G. E. Dissolved oxygen micro-analysis. I. Small-scale water-sampling vessels and amperometric titrations, 4021; II. Sources of interference, 4021; III. Interference during water sampling, 4021.

Potter, E. F., Wilson, J. R., and Williams, K. T.

Comparison of a glucose oxidase method with an official method for the determination of fructose. 1910

Potter, R. S., Linday, E. M., and Chayen, R. Equilibration device for paper chromatography,

Potter, V. R. See Ludwig, H., 5083. Pottier, P. See Blanc, A., 2031. Poulsen, K. G. Standard model D Keston polarimeter attachment for the Beckman DU spectrophotometer, 5112. Pound, R. V. See Freeman, R., 4626.

Pour, V., and Müller, J. Modified analyser for the determination of small amounts of oxygen in gases, 4046.

Pourchez, A. See Perron, R., 582. Pover, W. F. R. See Paul, J., 4187. Povinelli, R. See Szymanski, H., 3036.

Povondra, P., and Sulcek, Z. Determination of metals and minerals. IX. Determination of arsenic as molybdenum blue, 1712; X. Ion exchange for the determination of manganese and alkaline earths, 1744.

Powell, R. D. See Tamsma, A., 2454. Powell, W. A. See Varsel, C. J., 4298. Power, W. H., Kirby, H. W., McCluggage, W. C., Nelson, G. D., and Payne, J. H., jun. Separation of radium and barium by ion-exchange elution,

Powers, G. W., jun., Martin, R. L., Piehl, F. J., and Griffin, J. M. Arsenic in naphthas, 1821. Pozdeeva, A. G., Cherkasov, N. Kh., and Kruglova, F. L. Polarograp by for the analysis of coal-tar

products, 2836.

Pozsgay, G. See Vecsernyés, L., 2636.

Praphulla, H. B., and Anantakrishnan, C. P.
Composition of milk. III. Correlation between composition of milk. 111. Correlation between sodium, potassium, chloride and lactose contents of milk, 5430.

Prasad, B. N. See Anand, V. D., 4738.

Prat, L. See Lucena-Conde, F., 2031.

Prather, W. D. See Rogers, N. E., 115.

Pratt, P. F., and Bradford, G. R. Separation and

determination of total copper and zinc in soil,

Pražák, I., and Grimmer, J. Aluminium electrode in potentiometric titrations, 1634.

Presting, W., and Jänicke, S. Ion-exchange methods

Prestwood, B. J. See Bayhurst, B. P., 331.
Pretorius, V. See Basson, B. A., 3051, and Wet, W. J. de, 4561.

Prey, V., and Hammer, E. Paper-chromatographic determination of raffinose in sugar-factory products, 3494.

- Maier, L., and Szabolcs, O. Determination of total amino acids and glutamic and aspartic acids in sugar-factory juices, 3498.

- and Stadler, F. Paper-chromatographic determination of invert sugar in sugar-factory juices,

Szabolcs, O., and Szabolcs, I. Quantitative determination of non-nitrogenous organic acids in sugar-factory juices, 2448. Factory analyses for the determination of invert sugar, lactic acid and amino acids in sugar-factory products, 3493.

— See also Szabolcs, O., 3497.

Přibil, R. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] The latest researches in complexometry, 2031. Complexometry. I. The blocking of indicators and its elimination, 2603. [International Symposium on Microchemistry. Birmingham, 1958.] The present state of complexometry in Czechoslovakia, 3102.

- and Burger, K. Determination of thorium in the presence of zirconium, iron, lanthanum, uranium and other heavy metals, 447; 4726.

- and Kopanica, M. Chelatometric titration of manganese in ferromanganese, 997. Chelatometric titration of nickel in nickel pellets and nickel-iron alloys, 2241. Chelatometric methods in rapid applied analysis. III. Analysis of lowmelting bismuth - lead - cadmium - tin 3618.

and Kőrös, E. Complexometric determination of mercury in mercury compounds. I, 48.

Kőrős, E., and Barcza, L. Complexometric determination of mercury in mercury compounds. II. Assay of inorganic mercury compounds, 48; Assay of organic mercury compounds, 48.

- and Vydra, F. Chelatometry. XLIII. Masking of some bivalent metals with 1:10-phenanthroline. Selective determination of lead and aluminium,

See also Kopanica, M., 5179, and Vydra, F., 2071, 2223, 2731.

Přibyl. M. Determination of hydrogen in hydrocarbons by the use of β -radiation, 3785. and Havif, J. Modification of the Grote -

Krekeler apparatus, 2253.

Price, H. L. [Symposium on catecholamines.]
Estimation of adrenaline and noradrenaline concentrations in human plasma by the trihydroxyindole method, 4938

Price, W. E. See Gamble, L. W., 4259.
Price, W. J. Spectrum display comparator, 2555.
— See also Owen, A. G., 4630.

Pride, R. A. See Lister, R. E., 3477.

Pridham, J. B. Paper electrophoresis and paper

chromatography of phenolic compounds, 3330.

Priestley, L. J., jun. See Warren, G. W., 568.

Prieto Bouza, A. See Bermejo Martínez, F., 2031.

Prill, E. A., Porter, C. A., Staples, R. C., and Burchfield, H. P. Analysis of vanilla extracts for resins, carbonyl compounds, amino acids and other organic acids, 4478.

See also Burchfield, H. P., 1177, 1920, 3507. Primavesi, G. R. Analysis of light hydrocarbons, 3353.

Prins, H. K. Separation of different types of human haemoglobin, 2402.

Pristera, F., Halik, M., Castelli, A., and Fredericks, W.
Analysis of explosives using infra-red spectroscopy, 4894.

— See also Fredericks, W. E., 2353.

Pro, M. J., Etienne, A., and Feeny, F. Determination of carbon dioxide in wines by using a vacuum system, 2989.

Procházka, Ž. (nylons), 3035. Chromatography on polyamides

Sanda, V., and Macek, K. Paper chromatography of indole derivatives, 3350. Procházková, L. Determination of nitrates in water,

Proctor, K. A. See Baines, C. B., 3461, and Elvidge, D. A., 1155.

Prohaska, B. See Krajčinović, M., 2825.

Proincy, L. See Popper, E., 1267.
Prokes, J., and Vorel, F. Oscillopolarographic behaviour of some basic substituted esters and

amides (local anaesthetics), 1163.

Prokhorova, G. V. See Vinogradova, E. N.,

Prokof'ev, V. K., Moroshkina, T. M., and Bogdanova, I. V. Spectrochemical analysis of elements in complex solutions using ion-exchange adsorption,

- Sventitskii, N. S., and Taganov, K. I. Spectro-graphic determination of uranium or its compounds in the presence of impurities by diffusion convection transference, 3230.
- See also Moroshkina, T. M., 4075.

Prokop'eva, A. N. Spectrographic analysis of Alundum and glass, 1391.

Proszt, J., and Hegedüs-Wein, I. Coulometric determination of small concentrations of carbon dioxide in gas mixtures, 4184.

Proto, D. See Trifiro, E., 1064. Provedi, F. Spectrofluorimetric studies on olive oil, 5034.

Pruner, G. Determination of morphine in poppy capsules, 2422.

Prusiková, M. Application of repeated development to the separation of steroids on paper, 3925.

- See also Starka, L., 686.

Pruszyńska, J. See Łada, Z., 620.

Pryce, J. D. See Rubinstein, H. M., 3427.

Prytz, M. See Østerud, T., 3198.

Przheval'skii, E. S., and Moiseeva, L. M. Determination of small amounts of beryllium by means of β-diketones, 4136.

Przybyski, W., Smyth, R. B., and McKeown, G. G.
Determination of coal-tar colours on oranges, 5436

Przybylski, Z. Polarographic determination of iodine in aqueous solutions, 508.

Przybyszewska, K. See Basińska, H., 4210, 4271. Przytycka, R. See Minczewski, J., 978. Pshenitsyn, N. K., and Fedorenko, N. V. Micr

titration of rhodium with sodium pentamethylenedithiocarbamate, 2739.

Pszonicki, L. Spectrographic determination of cadmium in uranium oxide by fractional predistillation, 1292. Fractional distillation apparatus for use in spectrographic analysis, 5069. Spectrographic determination of cadmium in uranium oxide by fractional distillation, 5234.

See also Czakow, J., 495. Pszonka, B., and Sarnecki, K. Determination of sugars in sulphite waste liquor, 197.

Ptitsýn, B. V. See Morachevskaya, M. D., 4773. Pucini, L. See Boyalini, E., 1296, 1300.

Pudelkiewicz, W. J., and Matterson, L. D. Effect of coenzyme Q₁₀ on the determination of tocopherol in animal tissue, 4410.

Pugh, C. R., and Tucker, H. T. Colorimetric deter-

mination of gold in Merrill tail solutions, 4670.

Pumphrey, A. M., and Redfearn, E. R. Determination of the concentration of ubiquinone in mitochondrial preparations, 4934.

Pungor, E. High-frequency titrimeter and its use,

and Balázs, L. Limits of concentration measurement of a high-frequency titrimeter with a frequency of about 130 MHz, 4615.

and Hegedüs, A. J. Flame-photometric determination of the alkaline-earth metals, 3638.

and Konkoly-Thege, I. Flame-photometric determination of small amounts of strontium in the presence of much calcium and barium, 897;

and Zapp, E. É. Determination of aluminium with high-frequency titration, 911. High-frequency titration of aluminium, 3158. Determination of aluminium content by high-frequency titration, 4156.

Puranen, A. L. See Puranen, J., 1130.

Puranen, J., Puranen, A. L., and Hallman, N.

Determination of plasma glutamine by highvoltage paper electrophoresis, 1130.

Purcell, J. R., and Keeler, R. N. Sensitive thermal-

conductivity gas analyser, 5116.

Purr. A. Determination of foreign fats in cacao products. XI. Methods for the investigation of adulterants of cacao butter and chocolate, 2461.

Püschel, A., and Eckhard, S. Organic solvents in flame spectrometry, 4574.

Püschel, R. Photometric determination of cerium with sodium 1:2-dihydroxybenzene-3:5-disulphonate (tiron), 4692. Application of metal-specific indicators to precipitation titrations. VII. Determination of microgram quantities of orthophosphate, 4733.

- and Lassner, E. Application of metal-specific indicators to precipitation titrations. Volumetric determination of phosphate ion with standard cerium^{III} solutions after the separation of interfering ions with the aid of ion-exchange

resins, 4733.

- Lassner, E., and Reiser, P. L. Application of metal-specific indicators to precipitation titra-tions. IV. Determination of sulphate by titration with standard lead solution, 104.

 See also Lassner, E., 3200.
 Pustinger, J. V., jun., Cave, W. T., and Nielsen, M. L. Infra-red spectra of inorganic phosphorus compounds, 3703.

Puzdrenkova, I. V. See Alimarin, I. P., 1317. Pyke, R. E. See Shellenberger, T. E., 4123.

Pÿlaeva, L. I. See Zin'kov, Z. E., 4357.

Pyrah, A. F., and Robertson, R. S. Determination

of trace amounts of water in hydrocarbons, 2820.

Quackenbush, F. W. See White, H. B., jun., 3517.

Quatermain, P. G., and Hill, A. G. Determination of small amounts of sulphate, 4751.

Quentin, K.-E., and Indinger, J. Analysis of fluorine in foods and water. III. Quantitative fluoride determination, 2464.

Quinche, J. P. See Brunisholz, G., 2654. Quinn, V. A. Determination of penicillin in policmyelitis vaccine, 3956.

Raask, E. See Fielder, B. S., 4371.
 Rabatin, J. G., and Card, C. S. Simple recording thermobalance for vacuum and pressure studies,

Rabayeva, M. Yu. See Golÿsheva, M. G., 4505.
Rabiant, J. See Gautier, J.-A., 2917.
Rabin, B. R. See Crook, E. M., 4445.
Rabinovitz, M. See Rappaport, F., 1144, 1206.
Rabinowitz, J. See Baehler, B., 3968.
Rabovskii, B. G. See Finkel'shtein, A. I., 1624.
Rabovskii, G. V., Kuznetsova, T. F., and Belonogova, V. A. Photometric determination of vanadium

V. A. Photometric determination of vanadium, 2694

Rabuzin, T. See Smiljanić, G., 301. Rackham, R. F. See Hoather, R. C., 1958. Radell, E. A., and Strutz, H. C. Identification of acrylate and methacrylate polymers by gas chromatography, 2859.

Radin, N. S. See Kishimoto, Y., 5366. Radivojević, Z. See Celap, M. B., 3115. Radmacher, W., and Hessling, H. Spectrographic determination of trace elements in coal, 194.

- and Hoverath, A. Direct determination of oxygen in organic substances. Application to sulphur-containing compounds, 553. Direct determination of oxygen and its application in fuel analysis, 1091. Determination of carbon and hydrogen in solid fuels, 4372.

and **Schmitz**, **W.** Examination of fuel ash. Chelatometric determination of iron and alumin-

ium, 1392.

Radwan, Z., and Strzyżewska, B. Direct spectrographic determination of uranium in residues after leaching of ores, 484.

after leaching of ores, 484.

— See also Czakow, J., 4248.
Rady, M. See Szekeres, L., 992.
Rafols-Rovira, J. M. See Gómez Velasco, H., 1281.
Raggenbass, A. See Lefevre, A. M., 4664.
Ragle, J. R. See Nyman, C. J., 4728.
Raheem, A. A. A. El. See El Raheem, A. A. A.
Raikhbaum, Ya. D., and Kostyukova, E. S. Use of the method of additions in the spectrographic analysis of ores for indium and germanium, 2100.

- and Luzhnova, M. A. Quantitative spectro-graphic analysis of ores with the introduction of the samples into the arc by means of an air stream,

Raimbaoult, C. See Baron, G., 318

Rains, T. C., House, H. P., and Menis, O. Flame spectra of scandium, yttrium and rare-earth elements, 5182.

— See also Menis, O., 335.

Rainwater, F. H. Boron determination with 1:1'-

dianthrimide, 2496. Rajagopalan, K. V. See Sundaram, T. K., 2316. Rajzman, A. Quantitative micro-determination of diphenyl. Quantitative determination of diphenyl

in paper wrappers, 4352.

Räker. K. O. Determination of zinc and copper in biological matter, 4400.

Raković, M. See Havelka, S., 3018.
Rakowska, E. See Kemula, W., 4255.
Rall, H. T. See Thompson, C. J., 4811.
Ralls, J. W. Semi-quantitative determination of

volatile aldehydes, ketones and acids. Flash

exchange gas chromatography, 4825.

Ramachandra, B. V., and Dastur, N. N. Application of paper chromatography to differentiate ghee from other fats. II. Directly spotting fats on the chromatogram, 5432.

Ramachandran, T. P. See Athavale, V. T., 3671. Ramírez, A. See Urrutia, H., 560.

Ramirez-Muñoz, J. Flame photometry as an instrumental micro-analytical method, 3057.

 See also Burriel-Marti, F., 2031, 2620.
 Rancati, G., Marrama, P., Ferreri, C., and Bonati, B.
 Colorimetric estimation of the elastolytic activity of pancreatic extracts, 2915.

Randall, H. M. See MacLennan, A. P., 3412. Randall, S. W. See Clayton, M. M., 1500. Randell, A. See Sjöström, E., 1890. Rands, J. See Bradshaw, G., 3685. Ransley, C. E. See British Aluminium Co., Ltd.,

Rao, B. K. S., and Laddha, G. S. Rapid estimation of chlorate in presence of perchlorate, 507. Rapid titrimetric method for copper, 880.

Rao, G. G., and Appalaraju, N. Fluorimetric determination of boron with resacetophenone as

a reagent, 406.

and Murty, B. V. S. R. Vanadametry. Determination of uric acid. 4967.

- Sagi, S., and Suryanarayana, M. Potentiometric titration of molybdenum with ferric alum, 2196. and Sastri, T. P. Phthalocyanines as oxidation reduction indicators. V. Titra uranium^{IV} and molybdenum^V vanadate, 22. Vanadametry. Titration of iron II, with sodium Vanadametric

determination of phthalocyanines, 2330. Use of brucine as a redox indicator in dichromate

titrations, 3603.

and Suryanarayana, M. Volumetric determina-tion of molybdenum^{VI}. Use of hydrazine sulphate as reductant, 968. Oxidimetric methods for the volumetric determination of molyb-denum. I. Titration with ceric sulphate and sodium vanadate. Study in the mechanisms of redox indicator reactions, 2197.

See also Rao, V. P., 854, 2284, Sastri, T. P., 2599, and Suryanarayana, M., 4757.

Rao, G. J., and Rao, K. B. Cerimetric determination of mercury¹, 403. Dichromatometric determination of mercury^I, 2085.
- See also Rao, K. B., 416.

Rao, G. S. Resorcinol as a reagent for the spectrophotometric determination of ferric iron, 3745. Rao, K. B., and Rao, G. J. Cerimetric determination of thallium1, 416.

See also Rao, G. J., 403, 2085.

Rao, K. V. PA 155A: a new antibiotic, 5413.
Rao, S. V. See Venkat Rao, S.
Rao, V. K. M. Paper-chromatographic analysis of acids. Horizontal migration method. V, 2527; VI. Separation and identification of amino-acid mixtures, 4943.

Rao, V. P., and Rao, G. G. Triphenylmethane dyes as oxidation - reduction indicators in titrations with cerium^{IV} perchlorate, 854. Titration of oxalic acid with cerium^{IV} sulphate at room temperature using ferroin as internal indicator, 2284.

Rao, V. R. S., and Murthy, A. R. V. Determination of carbon disulphide with chloramine T, 5183.

Raphael, R. A. See Eglinton, G., 1393.
Rapp, R. D., and Memminger, M. M. Tri(hydroxymethyl)aminomethane as an electrophoresis buffer, 4066.

Rappaport, F., and Eichhorn, F. Sulphosalicylic acid as a substitute for toluene-p-sulphonic acid in the estimation of cholesterol, 4974.

Fischl, J., and Pinto, N. Estimation of urinary

17-oxosteroids, 3926.

- and Rabinovitz, M. Agar paper electrophoresis of A and F haemoglobins, 1144. Simple apparatus for electrophoresis, 1206.

Rappoport, D. A., and Chen, P. T. Separation of phosphate esters by paper chromatography, 4929.

Rapport, M. M., and Lerner, B. Structure of plasmalogens. IV. Lipids in normal and neoplastic tissues of man and in normal tissues of rabbit and rat. Determination of plasmalogen,

See also Skipski, V. P., 216, 5451.

Raptopoulo, R., Staudinger, H., and Weissbecker, L. Determination of corticosteroids in human urine. Review and comparison of existing methods, 1159

Raskin, I. M. Simple apparatus for paper electrophoresis, 4063. Raspi, G. See Cozzi, D., 2031.

Raspi, G. See Cozzi, D., 2031.
Ratcliffe, C. A. See Rieck, H. G., 3103.
Ratblun, E. R., jun. See Crouthamel, C. E., 2031.
Ratouis, M. See Ducret, L., 1336.
Ratycz, O. T. See Cords, H., 1543.
Raurich Sas, F.-E., and Tarrés Torras, A. Determinant of the Computer Literation. mination of alkaloids by high-frequency titration,

Rauscher, K. See Woggon, H., 3989. Ravenni, G. See Di Perri, T., 717. Ray, E. M. Colorimetric determination of traces of selenium, 3217.

Ray, G. K. See Kannan, L. V., 247, 3961, and Sarin, J. P. S., 3466.
Razumova, G. P. See Yakovlev, P. Ya., 2243.
Razumova, V. P., and Nadezhina, L. S. Determination of cadmium in chromium - nickel alloys, 3652.

Razumovskaya, L. P. See Bochkova, O. P., 2058.

Read, P. A. See Babson, A. L., 2418.
Reamer, H. H., Cokelet, G., and Sage, B. H. Viscosity of fluids at high pressures. Rotating cylinder viscometer and the viscosity of npentane, 1601.

Rebel, G. See Bieth, R., 2900. Rebmann, A. See Krauss, G., 4484. Rebora, P. See Strocchi, P. M., 2125. Rechaitzer, L. A., and Tevebaugh, A. D. Apparatus to measure high-temperature melting-points by the capillary-tube method, 4590.

Recourt, J. H. See Beerthuis, R. K., 5386.

Rede, C. van. Determination of the urease activity of soya meal, 1528.

Redfearn, E. R. See Pumphrey, A. M., 4934. Redfearn, M. W. See Central Electricity Generating Board, 4548.

Redinger, L., and Schmidt, J. Colorimetric determination of phosphate with ascorbic acid as reducing agent, 1710.

Redon, J.-C. See Dorier, C., 1157.
Reed, D. V. Determination of titanium as an impurity in zirconium and Zircaloy, 2144.

Reed, G. L., and Irving, H. Versatile electronic device for counting drops of eluent in chromatography or operating ancillary apparatus after pre-set counts or pre-set times, 296.

Rees, D. I., and Stephen, W. I. Redox properties of some alkoxyl-substituted benzidines, 2037.

See also Belcher, R., 2600, 4633. Reese, R. M. See Dibeler, V. H., 5125.

Reeskamp, C. J. Determination of cacao shell in cacao products from the galacturonic acid content, and the effect of alkalisation, 1570.

Reeve, W. Quantitative determination of sodium with α -methoxyphenylacetic acid, 24.

Rehman, A. H. See Azim, S. M. A., 2613. Reichel, C. See Schneider, F., 3496. Reichstein, T. See Krauss, M. T., 3879, and Stich, K., 688. Reid, C. D. See Harrison, J. A., 834.

Reid, R. L. Determination of ketone bodies in blood, 5356.

Reifer, I., and Buraczewska, L. Micro-determination

of ornithine, 1505.

Reilley, C. N. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Chelatometric titrations with potentiometric endpoint detection, 2031. [International Symposium on Microchemistry. Birmingham, 1958.] Some observations on chelatometry, 3102; Milli-coulometric methods of analysis, 3102. Review of fundamental developments in analysis.] Potentiometric titrations, 5125.

and Hildebrand, G. P. Methods of indirect

spectrophotometry, 3070.

Schmid, R. W., and Sadek, F. S. Chelon approach to analysis. I. Survey of theory and application, 3107

See also Martin, Albert Edwin, 326, and Sadek, F. S., 3866.

Reilly, C. A. [Review of fundamental developments in analysis.] Nuclear magnetic resonance spectrometry, 5125.

Reilly, J. See O'Donovan, D. G., 782.

Rein, J. E. See Maeck, W. J., 977, and Yamamura, S. S., 2666.

Reinefeld, E. See Schneider, F., 3499. Reiner, M., and Cheung, H. L. Determination of

fibrinogen, 1517.

Reinhold, T. M. Determination of tin in zirconium alloys, 2143. Gravimetric determination of hafnium and zirconium in hafnium materials,

— See also Goward, G. W., 3212. Reiser, P. L. See Püschel, R., 104.

Reiser, W. Analytical control of polyester condensation, 1836.

Reiss, R. Acid - base titrations in acetic anhydride,

Rekalova, G. I. See Belyakov, L. V., 5108. Rekker, R. F. See Pol, H. J. van der, 3947.

Renault, J. See Gautier, J.-A., 2917.

Renait, R. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.]

Colorimetric determination of arginine with diacetyl monoxime, 2031.

Rendina, G., and Singer, T. P. Studies on choline dehydrogenase. I. Extraction in soluble form, assay, and some properties of the enzyme,

Rengart, L. M. See Bankovskii, Yu. A., 3628. Rentschler, H. Detection of wine from hybrid

grapes in wine produced from Vinifera grapes,

Repetschnig, H. See Csapo, F., 4708. Reshetnikova, L. E. See Vyakhirev, D. A., 1089. Resnik, F. E. See Varsel, C. J., 4298. Resplandy, A. Chromatography of phenolic substances with aqueous solutions of electrolytes, 2793. Systematic chromatography of cardiac glycosides, 2929.

Ressler, N. Photo-electric ultra-violet photometry

applied to protein electrophoresis, 2397.

- and Jacobson, S. D. Far-ultra-violet direct photometry applied to protein electrophoresis, 1510.

- and Moy, T. Simplified fluid-film method of electrophoresis, 1999.

Nelson, N. A., Richards, W. P., and May, T. Effects of ionic strength on the relative mobility of abnormal serum proteins, 230.

- Nelson, N. A., and Smith, I. M. Use of an artificial standard for haemoglobin determination, 2401.

Réthy, B. See Bril, K. Y., 1326. Rexach-M. de Lizarduy, M. L. See Burriel-Marti, F., 2031, 2620.

Rey Mendoza, R. See Bermejo Martínez, P., 373 1667, 4649, 5133, 5151, 5245.

Reynolds, C. A. Colorimetric determination of boron with Victoria violet, 49.

Reynolds, F. B. See Marko, A. M., 4923.
Reynolds, G. F. Oscillographic polarography,
4103. The polarography of aluminium, 4155.

- See also Leake, L. R., 2309.
Reynolds, H. See Lichtenstein, H., 3526.
Reynolds, S. A. See Moore, F. L., 112.

Řezáč, Z. and Dvořák, J. Influence of vanadium on the flame emission of calcium, 5161.

— See also Dvořák, J., 1260. Rhoades, E. L. See Aikawa, J. K., 3863.

Rhodes, D. N. Colorimetric reactions of unsaturated fatty acids with metal salts, 5037.

Ribeiro Teixeira, E. See Mendonca Pinto, C., 3226.

Ricca, G. S. See Arpino, A., 3515.

Rice, E. W. Spectrophotometric determination of serum copper with oxalylhydrazide, 4899. Spectrophotometric determination of amylase with a stable starch solution, 4980.

Richard, J. J. See Banks, C. V., 1415.
Richard, M. J. See Fritz, J. S., 335.
Richards, E. W. T., and Crew, M. D. The uranium spectrum between 3500 A and 5500 A with associated isotopic shifts, 980. Automatic recording systems for use with a high-dispersion

recording systems for use with a high-dispersion spectrograph, 1211.

Richards, F. M. See Vithayathil, P. J., 5377.

Richards, H. K. See Strauss, H. D., 3398.

Richards, R. E. See Leane, J. B., 846.

Richards, W. P. See Ressler, N., 230.

Richelson, M. R. See Natelson, S., 4901.

Richmond, D. V., and Martin, J. T. Determination of rateone in longhogarane root and olego-resin of rotenone in lonchocarpus root and oleo-resin,

Richmond, V., and Hartley, B. S. Two-dimensional system for the separation of amino acids and peptides on paper, 3429.

Richter, G. See Hörhammer, L., 5361.
Richter, H. J., and Lapointe, Y. S. Determination of blood urea nitrogen with special reference to automatic chemical analysis, 4921.

Rick, W. Determination of carboxypeptidase in duodenal juice, 4983.

See also Herrmann, R., 2356.

Ricketts, R. W. See Harris, G., 1929.
Riddick, J. A. [Review of fundamental developments in analysis.] Acid - base titrations in non-aqueous solvents, 5125.

Ridgway, J. E. Differential determination of serum bilirubin, 2379.

Rieck, H. G., Ratcliffe, C. A., and Schwendiman, L. C. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part 2. Instru-mentation, remote-control techniques and mentation, remote-control techniques and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Automatic analysing monitor, 3103.

Riedel, K. Indirect volumetric determination of phosphate with ethylenediaminetetra-acetate,

Riedel, O., and Uhlmann, E. Gas-chromatographic determination of deuterium in a stream of hydrogen, 23.

Riedler, K., and Schreiner, L. Photometric determination of potassium with dipicrylamine (hexanitrodiphenylamine), 3132.

Riekstniece, E. See Green, M. N., 5380.

Rieman, W., III. See Breyer, A., 5084, and Sherma, J., 172.

Riemenschneider, R. W. See Herb, S. F., 5028. Riemer, G. See Stengel, E., 35.

Riemersma, J. C., and Heslinga, F. J. M. Paper chromatography of water-soluble dyes, 4880.

Riepma, P. See Kerssen, M. C., 2507. Rigamonti, R. Apparatus for counter-current

extraction between two liquids, 802.

and Spaccamela-Marchetti, E. Elimination of iron from metal solutions by extraction with solvents, 2226.

Rigault, G. Advantages of selective volatilisation and of "enhancement" in spectrographic analysis,

Rigot, M. R. H. Washing apparatus of high capacity for very slightly soluble chemical products, 1985.

Rihová, J. See Stráfelda, F., 5159. Riley, C. J. See Foreman, J. K., 2031. Riley, J. P. Use of continuous extraction for the removal of interfering elements in the determination of calcium and magnesium, 2633.

and Williams, H. P. Micro-analysis of silicate and carbonate minerals. I. Determination of ferrous iron, 163; II. Determination of water and carbon dioxide, 163; III. Determination of silica, phosphoric oxide and metal oxides, 2247; IV. Determination of aluminium in the presence

of interfering elements, 2247.
— See also Burton, J. D., 70.

Ringbom, A. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Metal - hydrogen peroxide - EDTA complexes and

their use in analytical chemistry, 2031.

Ringelmann, R. See Scheiffarth, F., 4963. Ringrose, H. T. Apparatus for detecting and indicating the presence and amounts of carbon dioxide in an atmosphere, 5470.

Rink, M., and Lux, R. Assay of caffeine and theobromine in an anhydrous medium with perchloric

acid solution, 1541.

Rio, A., Ripa, D., and Tribastone, S. Gas chromato-graphy applied to continuous control of industrial plants. I. Analysis of a mixture of C, to C4 hydrocarbons, 3835.

Ripa, D. See Rio, A., 3835. Ripan, R., and Pirvu, I. Separation of iron from manganese by means of benzoic acid and hexamine, and the quantitative determination of these metals in the absence of chlorine ions, 1749.

Risgin, O., and Taylor, R. C. Infra-red and Raman spectra of the pentafluoroethyl halides, 3800.

Ritter, D. M. See Seely, G. R., 3322.
Ritter, H., and Schnier, H. Gas-chromatographic analysis of coal products, especially those with high-boiling fractions, 2835.

Roberts, A. L. See Hughes, M. A., 3329. Roberts, B. J. See Hamlin, A. G., 4249. Roberts, F. P. Analytical method for neptunium-237 using anion exchange, 502.

- and Brauer, F. P. Sequential separation of some actinide elements by anion exchange, 2110.

Robertson, A. See Gwilt, J. R., 1598. Robertson, R. S. See Pyrah, A. F., 2820. Robins, D. M., Faust, J. P., and Harple, W. W. Infra-red cells for volatile and pyrophoric materials, 5109.

Robinson, A. E. See Beckett, A. H., 729.

Robinson, E. A. Determination of cystine with p-aminodimethylaniline, 1865. Robinson, J. B. D., Allen, M. de V., and Gacoka, P.

Determination of soil nitrates with a brucine reagent, 3017.

Robinson, J. W. See Bartkiewicz, S. A., 175, and Seefield, E. W., 3840. Robinson, R. H., and Conklin, D. B. Colorimetric determination of hydrogen dissolved in water,

Robinson, T. Polyethylene absorption cells for infra-red spectrophotometry, 1625. Robinson, W. T., jun., Cundiff, R. H., Sensabaugh, A. J., and Markunas, P. C. Titrimetric analysis of 3:5-dinitrobenzoate derivatives, 4324.

Robson, H., and Kuwana, T. Coulometric oxidation

of boron, 4687.

Roca Adell, M., Alvarez Gonzalez, F., and Fernandez Cellini, R. Quantitative spectrographic determination of zirconium in minerals, 439.

Rocchiccioli, C. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956. Micro-analytical study of chlorates by infra-red

Micro-analytical study of chlorates by hilla-red absorption, 2031. Rochelmeyer, H. See Mutschler, E., 2392, and Teichert, K., 5491. Rochow, E. G. See Brown, M. P., 5292. Rochow, T. G., Thomas, A. M., and Botty, M. C. [Review of fundamental developments in analysis.]

Electron microscopy, 5125.

Rocsin, M. See Cluhandu, G., 3704, 5209.

Roczniakowa, K. See Błaszkowicz, J., 2840.

Rodden, C. J. Developments and problems in inorganic analytical chemistry. Nuclear materials,

Rödder, W. See Diemair, W., 5438.
Rodgers, J. F. See Harter, G. J., 938.
Rodinov, V. M., Antokolskaya, Zh. A., Chudinovskikh, A. V., and Loboda, L. A. Electrophoretic separation of serum proteins on a starch gel, 3914.
Rodnova, G. G. See Zakharov, M. S., 4263.
Roe, D. K., and Nyman, C. J. Three-component polarographic cell, 5193.

polarographic cell, 5123.

Roe, J. E. See Levine, J., 2923. Roe, J. H. See Vahouny, G. V., 4976. Rogers, A. R. Influence of spectral slit width on the absorption of visible or ultra-violet light by pharmacopoeial substances, 700.

Rogers, A. W. Autoradiography of tritium-labelled

compounds on paper chromatograms, 1258.

Rogers, L. B. See Duffield, J. J., 5087, and Hercules, D. M., 1440.

Rogers, L. H. See Lee, T., 3232. Rogers, N. E., and Prather, W. D. Determination of uranium and beryllium in fused fluoride systems, 115.

Rogers, R. N. Determination of uranium in graphite, 3229

Roginskaya, Ts. N., and Finkel'shtein, A. I. Spectrophotometric determination of organic compounds by near infra-red absorption, 563.

Rogozinski, S. E. See Patchornik, A., 581. Rohmer, M. Determination of methyl groups in

polyethylene, 2852. Rohrschneider, L. The polarity of stationary phases

in gas chromatography, 3046.

Roitman, R. See Iachan, A., 672.

Rokosz, A., and Bocheńska, J. Microchemical test

for calcium, 893.

Roman, L. See Popper, E., 3634.
Roman, W., and Dulmanis, A. Serum quinine oxidase. Specific test for parenchymatous liver

damage, 1529.
Romand, J., Balloffet, G., and Vodar, B. Determination of oxygen and nitrogen in titanium samples by means of a special type of condensed vacuum spark, 1320.

Romani, B., and Bastianutti, I. Determination of bromoacetic acid in wine, 2990.

Romanova, E. V. See Goryushina, V. G., 5194. Romanova, L. V. See Maslennikov, B. M., 361. Romanova, T. G. See Kozan, V. B., 177.

Romanuk, M. Identification of the Ce to C11 fatty acids by paper chromatography, 1417.

Romashenko, A. R. See Skornyakov, G. P.,

Romijn, H. M. Microchemical reactions of sulpha compounds with copper acetate and amines, 2441. Microchemical reactions of barbiturates with copper acetate and amines, 2938.

Romita, R. See Guerreschi, L., 2031, 2643.

Ronchese, A. D., and Mermod, M. Colorimetric determination of small amounts of cobalt in hepatic tissues and extracts, 2871.

Ronzio, A. R. [Progress in microchemistry.] Organic and inorganic microsynthesis, 2033.

Rooney, R. C. Instrumentation in the foundry laboratory, 3021. Determination of trace elements in cast iron, 4272. Review of methods for deter-

mination of lead in cast iron, 5249.

Roos, J. R. See Peereboom, J. W. C., 4491.

Roper, J. N., jun. Heater for gas-chromatographic

columns, 5090.

Röpke, H., and Neudert, W. Advantages and limitations of the potassium bromide method of preparing samples for infra-red spectrography,

Ropp, R. C., Aia, M. A., Hoffman, C. W. W., Veleker, T. J., and Mooney, R. W. X-ray powder diffraction patterns of strontium phosphates, 898.

Rorem, E. S. Ultra-violet fluorescence of quinine sulphate for detection of phosphate ester spots on paper, 657

Roret, G. See Febvre, P., 4447.
Rose, B. A. Gas chromatography and its analytical applications. Review, 2532

See also Coomber, D. I., 3301.

Rose, H. A. Determination of a substituted glycol by electrolytic oxidation, 3305.

Roseira, A. N. See Göbel, E. F., 2031.

Rosen, A. A., and Middleton, F. M. Chlorinated insecticides in surface waters, 2497.

Rosen, G. D. [International Symposium on Microchemistry. Birmingham, 1958.] Microbiological assay of protein quality, 3102.

Rosenbaum, E. J., Adams, R. W., and King, H. H., jun. Monitoring trace hydrocarbons in air by catalytic oxidation and non-dispersive infra-red analysis, 773.

Rosenberg, H. Det matograms, 2160. Detection of phosphates on chro-

Rosenberger, A. See Faulhaber, M., 622. Rosenberger, H. M., and Shoemaker, C. J. Infra-red determination of nitrocellulose in mixtures of cellulose resins, 1456. Critical examination of the ferrocyanide determination of cadmium and related references, 2637.

Rosenblum, R., Wolfman, M., and Leiter, L. Correction for the interference of urea in the determination of total a-amino acid nitrogen in plasma by the ninhydrin photometric method,

Rosenthal, H. L., and Jud, L. Determination of sulphisoxazole [sulphafurazole] and sulphadi-

methoxine in blood and plasma, 2365. Rosenthal, I., Gordon, C. F., and Stanley, E. L. Micro-determination of TDE [1:1-dichloro-2:2di-(p-chlorophenyl)ethane] in spray residues, 1594.

- Jackson, F., and Watanabe, W. Analytical study of aminoethyl vinyl ether system based on countercurrent extraction, 2291.

See also Bonting, S. L., 4979.

Rosenthaler, L. Detection of organic mercapto compounds, 4830.

Rosotte, R., and Jaudon, E. Spectrophotometric determination of small contents of niobium and tantalum in stainless steel, 1013.

Ross, L. E. See Larsen, R. P., 335, 1718, 5197.

Ross, S. D., and Wilson, David Woodburn. Differential method of photometric analysis. I. Application to solutions containing one component, 4079; II. Application to solutions containing more than one component, 5511.

Ross, W. J., and White, J. C. Extraction and determination of thorium from sulphate and phosphate solutions with tri-n-octylphosphine oxide, 2681. Colorimetric determination of boron in nitrate solutions, 4152.

Rossi, C. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Measurement of radio paper chromatograms, 2031.

See also Busellu, M. A., 1399, 4301. Rossi, G. Spectrographic determination of hafnium to zirconium ratios, 4209.

See also Brunello, F., 1831, Fontana, P., 784, and

Mirone, P., 783.

Rossmanith, K., and Hanna, Z. G. Spectrographic determination of trace elements in wolframite,

Rost, W. J. See Anderson, S., 4468.
Rosyanov, S. P. See Shvedov, V. P., 2298.
Roth, F. J. Determination of Perthane [1:1-dichloro-2: 2-di-(p-ethylphenyl)ethane] and mixed Perthane - DDT residues, 1975.

Roth, H. H. See Mine Safety Appliances Co., 5472.
Roth, H. J., and Schrimpt, H. O. Aminolysis of epoxides. V. Determination of pyridine derivatives with epoxides, 4366.

Roth, J. F., and Ellwood, R. J. Determination of surface area using a gas chromatograph, 2541.

Roth, L. Paper-disc column chromatography, 298. Roth, M. See Laccetti, M. A., 584, and Semel, S., 632

Rothberg, I. See Baldinus, J. G., 1162.

Rothe, M., and Thomas, B. The formation, constitution and determination of aroma-producing substances in bread, 3982.

substances in bread, 3952.

Rother, H. See Schneider, F., 3496.
Rothmann, H. See Wirtz, H., 950.
Rotsch, A. See Ocker, H. D., 1562.
Rottová, O., and Zýka, J. Titrations with quinol and similar reducing agents. XII. Determination of persulphates, 2190.

Rottová-Kloubková, O., and Kalvoda, R. Use of oscillography in quantitative analysis. Determination of lead in blood, 5349.

Rotzler, G. See Stich, K., 688.

Roubert, J. Characterisation and determination of traces of captan [N-trichloromethylthiocyclohex-4-ene-1: 2-dicarboxyimide], 2504.

Rousselet, R. See Paris, R., 741. Routh, J. I. See Knouse, W., 679. Roux, A., and Roux-Matignon, J. Identification of pholcodine by micro-electrophoresis on paper. Differentiation from codeine, codethyline [ethylmorphine] and morphine, 5403.

Roux, D. G., and Maihs, E. A. Condensed tannins. III. Isolation and estimation of (-)-7:3':4':5'tetrahydroxyflavan-3-ol, (+)-catechin and (+)gallocatechin from black-wattle-bark extract, 3854.

Roux, G. See Blanc, A., 2031. Roux-Matignon, J. See Roux, A., 5403.

Rovescalli, A. Separation of lipo- and glycoproteins of serum by paper electrophoresis, 1519.

Rowell, K. M., and Winter, D. H. Quantitative

determination of flavanones in citrus bioflavonoids by potassium borohydride reduction, 3421. Rowlands, R. J. See Simmonds, D. H., 4424. Rowsome, M. See Hoffman, I., 4218. Roy, A. B. The enzymic synthesis of aryl sulpha-

mates. Assay of 2-naphthyl sulphamate, 3890.

Roy, B. R. See Sengupta, P. N., 1889. Roy, D. K. See Bhattacharya, K. R., 3430. Roy, J. K. Detection of sugars on paper chromatograms, 5355.

Rozaci, O. Polarographic determination of accelera-

tors in rubber and auxiliaries, 2349.

Rozanova, L. N., and Kamaev, G. A. Determination of copper and iron impurities in arsenic by ion exchange, 3202.

Rozdział, P. See Trzebiatowski, W., 2683.

Rozek, A. L. See Griffing, M. E., 4866.
Rozova, M. I., and Stolyarova, F. N. Analysis of nitroparaffins by the use of a chromatographic method, 1070. Rubbi, P. Qualitative analysis of organic pigments,

Rubegni, M. See Di Perri, T., 717. Rubel, S. See Kemula, W., 358.

Rubins, E. J., and Hagstrom, G. R. Determination of aluminium and iron in plant tissue, 2868.

Rubins, I. B. See Menis, O., 335. Rubinstein, H. M., and Pryce, J. D. Colorimetric estimation of a-amino nitrogen in tissue fluids,

Ruchik, A. S., and Starostina, L. S. Determination of calcium and strontium (calculation method), 397.

Rudhe, H. See Koch, W., 5250.

Rudney, H. See Ferguson, J. J., jun., 695. Rudy, M. See Sobel, C., 2913. Ruhrchemie Akt.-Ges. Continuous determination of reactive constituents of gas mixtures, 4549.

Ruipérez, L. G. See Garzón Ruipérez, L. Ruiz, G. See Scala, E., 1847.
Ruksha, N. P. See Kuranov, A. A., 1275.
Rumens, M. G. See Levenson, G. I. P., 1101.
Rumi, B. See Leonardi, G., 5427.

Rumpf, P. Analytical applications of the measure-

ment of ionisation constants, 4642. Runge, E. F., and Bryan, F. R. Micro-analysis of metals by optical emission spectroscopy, 18. Optical spectrographic determination of alumin-

ium in a titanium alloy, 2642.

Ruoff, A. L. See Giddings, J. C., 5077.
Rupe, C. O., and Free, A. H. Test for phenyl-ketonuria, 1490.
Rusanov, A. K., Khitrov, V. G., and Batova, N. T. Low-temperature carbon arc as source for exciting the spectra of rubidium, caesium, thallium and indium in the spectrographic analysis of silicates, 2622.

- and Sosnovskaya, L. I. Influence of third elements in the spark spectrographic analysis of

solutions, 3567.

— See also Alekseeva, V. M., 4175.

Russell, A. B. Determination of small amounts of tin, 3185.

Russell, F. R., and Wilkinson, N. T. Determination of cyanide in effluents, 3533

ot cyanide in emients, 3533.

Russell, H. D. See Bowers, R. C., 4850.

Russkikh, A. A. See Gernet, E. V., 4018.

Russo, R. See Pipitone, V., 2421.

Russo-Alesi, F. M. See Ferrari, A., 2431.

Ruthven, C. R. J. See Sandler, M., 1493, 3883.

Ruyter, J. H. See Smit, W. M., 3611.

Ružička, E. Detection of bromate, 1345. Ascorbimetric determination of reseaurin and resconding

metric determination of resazurin and resorufin and their derivatives, 1828.

Růžička, J. Electro-analysis by isotope dilution. I. Micro-coulometer for radioactive silver and for silver determination, 3636.

Ryabchikov, D. I., and Bukhtiarov, V. E. Separation of titanium from tungsten by ion-exchange chromatography, 5189.

Ryabchikov, D. I., Palei, P. N., and Mikhailova, Z. K. Reaction of sexavalent uranium with EDTA, 2711. Separation of uranium from accompanying metals by ion-exchange chromatography, 4250.

and Volynets, M. P. Separation of niobium and

tantalum by the liquid extraction method, 3211. Zarinskii, V. A., and Nazarenko, I. I. Potentiometric determination of rhenium in the presence

of molybdenum, 3246.

Ryabov, A. V., and Tarakanov, O. G. Indirect polarographic analysis, 1097. Ryabushko, O. P. See Dem'yanchuk, A. S., 3160.

Ryan, J. R. See Frain, J. F., 2136, 2149, 2150. Ryanicheva, M. I. See Evenigorodskaya, V. M., 2206.

Ryba, O. Volumetric determinations in strongly alkaline media. X. Determination of active

methylene groups, 1405.

Rybakow, W. N. See Stroński, I., 4173.

Rÿchkov, R. S. See Mendlina, N. G., 3163.

Ryhage, R. A 180° mass spectrometer for analysis

of organic compounds of high molecular weight.

and Stenhagen, E. Mass-spectrometric studies.
II. Saturated normal long-chain esters of ethanol and higher alcohols, 4336; III. Esters of saturated dibasic acids, 4336; V. Methyl esters of monoalkyl-substituted acids with ethyl or longer sidechain, and methyl esters of di- and poly-alkyl-substituted acids, 5283; VI. Methyl esters of normal-chain oxo-, hydroxy-, methoxy- and epoxy-acids, 5283.

See also Brohult, S., 4001, and Hallgren, B., 755.
 Rynasiewicz, J., and Consalvo, V. F. Chemical determination of boron in boron carbide - zirconium clad with Zircaloy, 1299.

Ryss, I. G., and Vitukhnovskaya, B. S. Volumetric determination of manganese after oxidation to the tervalent state, 512.

Rysselberge, J. van. Analysis of light hydrocarbons in crude petroleum by means of vapour-phase chromatography, 2321.

Sachse, H. B. Determination of small stoicheiometric deviations in oxide monocrystals, 4644. Sack, G. See Kolbach, P., 2466.

Sackville, R. C. Absorptiometric determination of thorium in miscellaneous plant products, in-cluding ores, chemical and gravity concentrates, uranium trioxide and various plant streams, 2154.

Sadek, F. See Flaschka, H., 2031.
Sadek, F. S., and Reilley, C. N. Visual indicators for the chelatometric calcium determination in serum, 3866.

— See also Reilley, C. N., 3107.
Sadini, V. See Doro, B., 752.
Sadler, H. N. See Ellis, S. R. M., 1661.
Saeki, Y. See Kitazato, T., 3720.
Saeys, H. W. See Asselbergs, C. J., 5488.

Safář, J. See Horák, F., 1893.

Saffran, M., and Sharman, D. F. Eluter for paper chromatograms, 5079.

Safronkova, N. N. Determination of sesquioxides and titanium dioxide in the total chemical analysis of soils and the separation of aluminium from

iron, 4525.

Sage, B. H. See Reamer, H. H., 1601.

Sagi, S. See Rao, G. G., 2196.

Ságner, Z. See Matrka, M., 1436, 2601, 2813.

Saba, S. N. See Datta, S. K., 4631.

Sahli, M., and Huber, M. Adsorption chromato-graphic separation of barbiturates, 3963.

Sahoo, B. See Singh, K., 3728.
Sahota, S. S. See Singh, B., 2050, 4781.
Saier, E. L., Campbell, E., Strickler, H. S., and Grauer, R. C. Determination of 17-oxosteroids. dehydroepiandrosterone and 17-hydroxycorticosteroids in serum, 2909.

Saifer, A., Gerstenfeld, S., and Harris, A. F. Photometric micro-determination of amino acids in biological fluids with the ninhydrin reaction,

and Harris, A. F. Photometric determination of

phenylpyruvic acid in urine, 653.

and Siegel, H. A. Photometric determination of the sialic (N-acetylneuraminic) acid distribution in cerebrospinal fluid, 215.

Saint, H. C. J. Spot tests for the identification of titanium alloys and their differentiation from zirconium and its alloys, 3695.

St. Clair Gantz, E. See Gantz, E. St. C.

See Ishibashi, Masayoshi, 2108, 2578. Saito, K. See Yamamoto, Tamechika, 2268. Saito, M. See Shiraishi, I., 106.

Sakai, S., Mori, H., and Ichimura, S. Detection and determination of meprobamate. II. Colorimetric determination with Ehrlich's reagent, 727.

Sakami, W. See Stevens, A., 1867. Sakharov, A. A. Polarographic determination of micro amounts of copper, lead and zinc in the

presence of iron, 1655. Sakharova, Ya. G., and Shishkina, N. I. Complexometric determination of fluoride in cryolite, 3239.

Salaria, G. B. S. Qualitative analysis for cations and anions, 2597.

Salas Sanceledonio, J. See Pássera, P., 4704.

Saling, E. See Damaschke, K., 4895.

Sall'. A. O. Threshold of sensitivity of an infra-red absorption gas analyser with gas modulation,

and Stanevich, S. V. Selective radiation of gas in infra-red gas analysers, 5506.

Sallee, E. M. See Lohman, F. H., 2225.

Salmon-Legagneur, F. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, Use of a derivative of tri-substituted di-acids as analytical reagent for sodium ions in the presence of potassium ions, 2031.

Salo, T., and Blair, B. Gas-counting method for determination of carbon-14 of proteins labelled with both carbon-14 and iodine-131, 3916.

Salome, O. See Strickland, R. D., 1511. Salomon, G., Schooneveldt-van der Kloes, C. J., and Zwiers, J. H. L. Infra-red spectra of some meth-

acrylic esters and their polymers, 5327.
Salovius, B., Hirsjärvi, V. P., and Uosukainen, M. Volumetric determination of small amounts of iron. II, 4780.

See also Hirsjärvi, V. P., 4267.

Salpeter, E. W. Construction of variable-slit photometers for the measurement of effective widths, 2547.

Salton, M. R. J. Detection of N-acetylamino sugars on paper chromatograms, 2385.

Saltsman, W., and Kuiken, K. A. Tall oil in sulphate

black liquor, 3374. Saltzman, B. E. Nitrogen dioxide reagent for recording air analysers, 4017.

- and Gilbert, N. Iodimetric micro-determination of organic oxidants and ozone. Resolution of mixtures by kinetic colorimetry, 2759.

Salvagnini, L. See Grandi, F., 1589. Salvesen, B., and Solli, O. Analytical control of meprobamate by non-aqueous titration, 1902.

Salvisberg, M. See Diemair, W., 2969. Salzer, F. Automatic distillation analysis, 3033.

Salver, D., and Sweet, T. R. Potassium cobaltinitrite as a precipitation form for cobalt using radio-cobalt tracer, 4790.

Samartseva, A. G. Electrolytic separation of trace amounts of uranium, neptunium, plutonium and

americium, 5236.

Sambhi, M. P., and Grollman, A. Determination of uric acid. 4966.

Sambucetti, C. J. See Kolthoff, I. M., 1635, 2021, 2217, 4769, 5241.

Sammons, H. G., and Wiggs, S. M. Separation, estimation and analysis of calcium soaps in human faeces, 3867.

Sampedro Piñeiro, A., and Asensi Álvarez-Arenas, E. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Spectrochemical assay of anti-friction alloys, 2031

Sampietro, C., and Invernizzi, I. Determination of lemon juice in drinks and syrups, 2978. Quantitative determination of carbohydrates in malt

extracts, 4483.

Samsel, E. P., and Aldrich, J. C. Sample-injection valve for gas chromatography, 1204.
 Samuelson, O., Ljungqvist, K. J., and Parck, C.

Separation of aldonic acids by ion-exchange chromatography, 3317.

See also Franzon, O., 2334, and Lagerström, O., 3242.

San Antonio, J. P. Demonstration of lindane [y-BHC] and a lindane metabolite in plants by paper chromatography, 789.

Sanceledonio, J. S. See Salas Sanceledonio, J.

Sanda, V. See Procházka, Ž., 3350. Sandell, E. B. See Surasiti, C., 4793. Sandhu, S. S. See Paul, R. C., 1247, 1651.

Sándi, E. Analysis of some insecticidal phos-

phorothioates, 790.

Sandler, M., and Ruthven, C. R. J. Quantitative colorimetric method for estimation of 4-hydroxy-3-methoxymandelic acid in urine. diagnosis of phaeochromocytoma, 1493. Colorimetric estimation of 4-hydroxy-3-methoxymandelic acid in urine, 3883.

Sandri, Giovanni. Determination of some synthetic plant-growth regulators, 2503.

Sandri, G. C. Microchemical differentiation of some

diethylamides used in pharmacy, 1168.

Sanguinetti, F. See Caldarera, C. M., 2389.

Sanik, J., jun. Determination of porphyrins in crude petroleum, 3839.

Sant, B. R. Oxidation of hydroxylamine by ferricyanide in presence of zinc sulphate. Estimation of hydroxylamine and hydrazine in a mixture,

and Mukherji, A. K. Amperometric titrations with rotated platinum electrode. I. Determina-

tion of hydrazine by potassium bromate, 450. and Sant, S. B. Quantitative oxidations by potassium ferricyanide, 3607.

See also Sant, S. B., 2129, 2671, 2785, 4715. Sant, S. B. Electrometric titration of alkaline ferricyanide with hydrazine sulphate and arsenicIII, 527.

and Sant, B. R. Thiodiglycollic acid as a reagent for zirconium, 2129. 2-Mercaptoacetic (thioglycollic) acid as a reagent for zirconium, 2671. Titrimetric determination of thioglycollic acid by copper¹¹, 2785. Thiomalic acid as reagent for zirconium, 4715.

— See also Sant, B. R., 3607. Sant'Agostino, L. See Senise, P., 68, 4744.

Santhanam, K. S. V., and Nair, A. P. M. Coulometric estimation of ferricyanides, 2227.

Santini, R., and Jesus, J. M. de. Determination of phosphorus, nitrogen, magnesium, calcium, sodium and potassium in faeces and diets, 639.

Santoianni, P. See Montagnani, A., 1864. Santos Veiga, J. See Pereira Crespo, V., 2031. Santra, A. K., and Banerjee, N. G. Determination of chlorine in organic liquids, 1775.

Santucci, F. See De Gori, R., 2842. Sanz, F. See Astudillo, M. D., 2031. Sanz, M. C. Physico-chemical theories of, and new developments in apparatus for, quantitative ultra-micro analysis, 1240.

Sapetti. C. Determination of phosphates in soil by the phosphorus-32 isotopic dilution method, 1592. Sapozhnikov, D. I., Maevskaya, A. N., and Popova, I. A. Determination of chlorophylls a and b by

paper chromatography, 3419. Sára, J., and Berndt, W. Complexometric deter-

mination of zinc and magnesium in the spinning baths of the viscose industry, 3377.

— See also Bendt, W., 2625.

Saraeva, N. F. See Gur'ev, S. D., 1675.

Saraswat, H. C. Polarographic estimation of cadmium in presence of nickel, cobalt and bismuth, 3653.

Sargin, S. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Study on the oxalate - magnesium complex, 2031.

Sarin, J. P. S., Nandi, R. C., and Ray, G. K. Colorimetric estimation of emetine in ipecacuanha,

Sarma, P. S. See Sundaram, T. K., 2316. Sarma, P. S. N., and Krishnamurthi, M. Determination of potassium guaiacolsulphonate in pharmaceutical preparations, 1554.

Sarnecki, K. See Pszonka, B., 197. Sarraff, A. See Blass, J., 4418.

Saršúnová, M., Majer, J., and Tölgyessy, J. Radiometric determination of iodides and iodine in solutions of official ethanolic iodine - iodide solutions, 2960.

- Tölgyessy, J., and Majer, J. Radiometric determination of some pharmacopoeial cintments and powders. Determination of calcium and

sulphur, 4467.

See also Tölgyessy, J., 2958.

Sas, F.-E. R. See Raurich Sas, F.-E. Sasakawa, T. Digitalis. IV. Products in the reaction of B-series glycosides in Digitalis purpurea L. with Jensen's reagent for fluorescence determination. (1). Studies by paper partition chromatography, 3469; V. Products in the reaction of B-series glycosides in Digitalis purpurea with Jensen's reagent for fluorescence determination. (2) Studies of the interest purpure of the purpure of the series of the purpure determination. (2). Studies on the intermediates in the reaction of digitalinum verum or strospeside with Jensen's reagent for the determination of B-series glycosides in Digitalis purpurea, 3469

Sasaki, Y. See Minami, E., 2031. Saslaw, L. D. See Waravdekar, V. S., 1848. Sass, S., Beitsch, N., and Morgan, C. U. Determina-

tion of fluorine in phosphoro- and phosphonofluoridates, 3289

- Master, I., Davis, P. M., and Beitsch, N. Volumetric determination of some organophosphorus halidates and pyroester compounds using a peroxide reagent, 4342.

Sastri, T. P., and Rao, G. G. Brucine as an oxidation - reduction indicator in cerimetry, 2599.

See also Rao, G. G., 22, 2330, 3603.

Sastry, C. A. See Subrahmanyam, P. V. R., 3532.

Sasuga, H. See Hirano, S., 3775. See Itsuki, K., 930, 1766.

Sato, F. See Itsuki, K., 930, 1766. Sato. I. See Matsunaga, A., 4035, and Sera, K.,

Sato, Kiyoshi, and Takeuchi, K. Spectrophotometric determination of a trace amount of magnesium in pure sodium chloride with xylidyl blue, 394.

Sato, Koichi, Matsumura, Y., Miyakawa, K., and Yoshimura, S. Determination of reducing sugars in sulphite waste liquors, 2333.

Sato. M. Aluminium hydroxide and barium carbonate as carrier for lead in the presence of copper, 4104

See also Ishibashi, Masayoshi, 1011. Sato, R. See Kanazawa, J., 1971, 4037.Sato, Y. See Noto, T., 258.

Sauciuc, A. Determination of chlortetracycline and brometracycline in tetracycline produced by fermentation, 4454. Colorimetric micro-deter-mination of chlorine and bromine in organic substances, 5265. uer, K. H. See Fehér, F., 466.

Sauer, K. H.

Sautier, C. Diffusion of sodium and potassium in Measurement by chromatographic separaman. tion of the radioactive elements, 2866.

Sautière, P. See Biserte, G., 673. Savage, G. M. See Eble, T. E., 1896. Savage, R. M. Assay of anti-haemophilic globulin, 3480.

Savariar, C. P. See Majumdar, A. K., 340, 1269, 1350, 1767, 3694, 4242, 5203.

Savina, E. V. See Filippova, N. A., 5224.

Savinov, B. G. Infra-red absorption spectra for standardising substances used in vitamin-E synthesis, 2489.

Savitskaya, I. S., and Songina, O. A. Amperometric titrations with two indicator electrodes, 5518.

Savoia, F. Horizontal chromatography, 1991. Savostin, A. P., and Alimarin, I. P. Determination of small amounts of tantalum and niobium in

granite by the isotopic dilution method, 4227.

Savvin, S. B., and Bagreev, V. V. Photometric determination of thorium in minerals by means of arsenazo III, 5200.

See also Kuznetsov, V. I., 5199, and Luk'yanov.

V. F., 3197.
Sawada, H. See Noto, T., 258.
Sawada, K. See Momose, T., 2031.
Sawicki, E., and Elbert, W. Thermochromic detection of polynuclear compounds containing

the fluorenic methylene group, 2313.

Hauser, T. R., and Stanley, T. W. Solvent effects in the spectrophotometric determination of weak organic acids in alkaline solution. Application to aromatic primary amine and carbonyl derivatives, 3343.

Noe, J., and Stanley, T. W. Detection of aralkyl and dialkyl ketones containing the -CO·CH,-

group, 4354.

Stanley, T. W., and Hauser, T. R. Detection of primary aromatic amines, 1085. Spectral detection of terminal-ring quinones, 2797.

Stanley, T. W., Hauser, T. R., and Barry, R. Isatin tests for aromatic hydrocarbons and

phenols, 2301.

Sawyer, D. T. See Cole, L. G., 3283.

Saylor, J. H. See Cooney, B. A., 2097.

Sayun, M. G., and Tsyb, P. P. Electrolytic separation of indium, thallium, zinc and cadmium and their determination in a single sample, 1658.

Sazonova, V. A., and Leonov, V. N. Lithium tetra-p-tolylboron as a reagent for the quantitative determination of sodium, 2064.

Sazonova, Z. A. See Mikhal'chuk, B. V., 883.

Sbrolli, W. See Capaccioli, T., 1699.
 Sbrzesny, H. See Ziegler, M., 30, 3140, 4668.
 Scala, E., Beati, M., and Ruiz, G. Determination of pentoses in plasma by Bial's reaction, 1847.

Scarano, E., and Signoretti, S. Titration of weak acids with an aluminium electrode, 4114.

See also Mari, A., 1986.
 Scarborough, J. M. Infra-red spectra of diphenyl and several deuterated diphenyls, 4843.

Scardsville, P. A. See Frieser, R. G., 4358.
Scarselll, V. Spectrophotometric determination of elastin, 3443. Colorimetric determination of elastin, 3444.

Scatena, M. See Scoffone, E., 2031.

Schaafsma, H. J. See Schutte, R., 1191. Schachter, D. Fluorimetric estimation of magnesium in serum and urine, 3388.

Schaefer, T. P. See Leane, J. B., 846.
Schaefer, H. F. Chemical microscopy of isoquinoline. Identification of the noble metals, 156. Micro-crystalline test for osmium, 160.

Schaller, A., and Mihalovics, E. Complexometric determination of the total zinc and zinc oxide content of lithopone, 3384.

Schaller, P. Determination of purity and assay of sodium lauryl sulphate. I, 179; II, 728.
Schantz, E. J. See McFarren, E. F., 1563.

Scharf, R. See Lassner, E., 107, 483, 1728, 3200, 3266, 4721, 5196. Scharfe, G. Gas-chromatographic analysis of gases

containing hydrocarbons, 2318. Scharrer, K., and Mengel, K. Determination of magnesium for agricultural chemical analyses, 287.

Schaschkin, W. L., and Schumilin, J. C. Radio-metric determination of uranium content of earth samples, 113.

Schechter, M. S. See Giang, P. A., 4536. Scheiffarth, F., Frenger, W., and Ringelmann, R. Quantitative method of serum properdin deter-

mination with inulin, 4963.

Schenck, H.-J. See Arendt, I., 1795.
Schenck, J. R. See Washburn, W. H., 1494.
Schenk, G. H. See Fritz, J. S., 2761.
Schenk, R. U. Photometric determination of

2:4:6-trichlorophenol, 4846.
Scherrer, A. See Thomann, O., 775.
Scheske, F. A. See Washburn, W. H., 1494.
Scheunert, E. See Gassmann, B., 210.

Scheurlen, P. G. Quantitative determination of small amounts of protein with an indicator, 229. Method of quantitative protein determination, 1868.

Schiaffino, S. S. See Deutsch, M. J., 4498, 4500,

4501, and McGuire, J. J., 4421.
Schiele, C. See Weiner, R., 2195.
Schill, G. Photometric determination of quaternary ammonium compounds with hexanitrodiphenylamine. II, 2780.

and Danielsson, B. Photometric determination of quaternary ammonium compounds with hexanitrodiphenylamine. I, 2292.

Schilling, K. Isolation and determination of partially hydrogenated fatty acids as the mercury adducts, 2484.

Schilt, A. A. See Smith, G. F., 2031. Schindewolf, U. Selenium and tellurium content of stony meteorites by neutron activation, 4753.

Schindler, G. See Grubitsch, H., 4756.
Schindler, O. See Krauss, M. T., 3879.
Schinzel, S. Determination of EDTA in the presence

of condensed phosphates, 2781.
Schirren, C. See Harke, W., 4913.
Schiweck, H. See Weidenhagen, R., 3495.
Schlenk, H. See Mangold, H. K., 1127.

Schlögl. K. Detection of organic acids on paper chromatograms, 1790. Schluter, E. C., jun. Trace analysis for total nitrogen

in petroleum fractions. Adsorption - ter Meulen method, 1820.

Parry, E. P., and Matsuyama, G. Determination of sulphur in petroleum products by hydrogena-

Schmalz, E. O. See Kimmer, W., 2862.
Schmauch, L. J., and Dinerstein, R. A. Response of thermal-conductivity cells in gas chromatography, 5093.

Schmid, A., and Zipf, K. Flame-spectrophotometric determination of strontium and calcium in bone. 5345

Schmid, L. See Woldich, K., 181, 4879. Schmid, O. J., Oriol-Bosch, A., and Voigt, K. D. Separation of synthetic steroid esters by paper electrophoresis, 1153.

Schmid, P. See Kleber, W., 747, 1572, 3994,

Schmidt, R. W. See Reilley, C. N., 3107.
Schmidt, E. See Schön, H., 4922.
Schmidt, F. See Herr, W., 2758.
Schmidt, H. Alternating-current and square-wave polarography, 4605.

Schmidt, Herbert. Determination of sorbic acid. 1792.

Schmidt, J. See Redinger, L., 1710.
Schmidt, W. See Konopicky, K., 4641, 5173.
Schmidt-Küster, W.-J. See Schultze, G. R., 3050.
Schmitz, H., and Walpurger, G. Separation of

phosphoric acid esters by ion-exchange chromatography, 2789.

Schmitz, W. See Radmacher, W., 1392.

Schmulbach, C. D. Quantitative determination of

traces of pyrophosphate in orthophosphates.

Schneer, A. Titrimetric determination of zirconium in "red mud", 4719.

and Hartmann, Hilda. Volumetric determination of zirconium. I. Permanganate method, 4203; II. Chromate method, 5193.

Schneider, F., Emmerich, A., Reichel, C., and Rother, H. Paper-chromatographic determination of raffinose, 3496.

Reinefeld, E., and Forth, H. Nitrogenous non-sugars. III. Determination of glutamine in

sugars. 111. Determination of glutamine in sugar-factory juices, 3499.

Schneider, R. A. See Helmholz, H. R., 1021.

Schneilen, C. G. T. P. See Jansen, H. E., 1928.

Schneiter, M. See Grimaldi, F. S., 951.

Schnier, H. See Ritter, H., 2835.

Schnitzer, M. See Hoffman, I., 5046, and Wright,

J. R., 5046.

Schnopper, H. W. See Parratt, L. G., 839. Schnopper, I., Broussard, J. O., and LaForgia, C. K. X-ray powder diffraction data of azoic coupling components, 1827.

Schnurbusch, H. See Kaufmann, H. P., 1936.

Schöber, G., and Gutmann, V. Polarography in anhydrous ethylenediamine, 4603.

Scholes, I. R. See Wood, D. F., 1716.
Scholer, R., Longchamps, J., and Jayle, M. F.
Fluorimetric determination of phenolic steroids in acid medium, 4975.

Schomburg, G., Köster, R., and Henneberg, D. Boron compounds. II. Gas-chromatographic analysis of trialkylboranes involving spectrometric measurements, 2790.

Schön, H., Ordnung, W., and Schmidt, E. Determination of 5-hydroxyindol-3-ylacetic acid in urine, 4922.

Santhanam, K. S. V., and Nair, A. P. M. Coulometric estimation of ferricyanides, 2227.

Santini, R., and Jesus, J. M. de. Determination of phosphorus, nitrogen, magnesium, sodium and potassium in faeces and diets, 639.

Santoianni, P. See Montagnani, A., 1864.
Santos Veiga, J. See Pereira Crespo, V., 2031.
Santra, A. K., and Banerjee, N. G. Determination of chlorine in organic liquids, 1775.

Santucci, F. See De Gori, R., 2842.
Sanz, F. See Astudillo, M. D., 2031.
Sanz, M. C. Physico-chemical theories of, and new developments in apparatus for, quantitative ultra-micro analysis, 1240.

Sapetti, C. Determination of phosphates in soil by the phosphorus-32 isotopic dilution method, 1592. Sapozhnikov, D. I., Maevskaya, A. N., and Popova, I. A. Determination of chlorophylls a and b by

paper chromatography, 3419.

Sára, J., and Berndt, W. Complexometric determination of zinc and magnesium in the spinning baths of the viscose industry, 3377.

-See also Bendt, W., 2625.
Saraeva, N. F. See Gur'ev, S. D., 1675.
Saraswat, H. C. Polarographic estimation of cadmium in presence of nickel, cobalt and bismuth, 3653.

Sargin, S. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Study on the oxalate - magnesium complex, 2031.

Sarin, J. P. S., Nandi, R. C., and Ray, G. K. Colorimetric estimation of emetine in ipecacuanha,

Sarma, P. S. See Sundaram, T. K., 2316. Sarma, P. S. N., and Krishnamurthi, M. Determination of potassium guaiacolsulphonate in pharmaceutical preparations, 1554.

Sarnecki, K. See Pszonka, B., 197. Sarraff, A. See Blass, J., 4418.

Saršúnová, M., Majer, J., and Tölgyessy, J. Radiometric determination of iodides and iodine in solutions of official ethanolic iodine - iodide solutions, 2960.

- Tölgyessy, J., and Majer, J. Radiometric determination of some pharmacopoeial ointments and powders. Determination of calcium and sulphur, 4467.

— See also Tölgyessy, J., 2958.

Sas, F.-E. R. See Raurich Sas, F.-E.

Sasakawa, T. Digitalis. IV. Products in the reaction of B-series glycosides in Digitalis purpurea L. with Jensen's reagent for fluorescence determination. (1). Studies by paper partition chromatography, 3469; V. Products in the reaction of B-series glycosides in Digitalis purpurea with Jensen's reagent for fluorescence determination. (2). Studies on the intermediates in the reaction of digitalinum verum or strospeside with Jensen's reagent for the determination of B-series glycosides in Digitalis purpurea,

Sasaki, Y. See Minami, E., 2031. Saslaw, L. D. See Waravdekar, V. S., 1848. Sass, S., Beitsch, N., and Morgan, C. U. Determination of fluorine in phosphoro- and phosphonofluoridates, 3289

- Master, I., Davis, P. M., and Beitsch, N. Volumetric determination of some organophosphorus halidates and pyroester compounds using a peroxide reagent, 4342.

Sastri, T. P., and Rao, G. G. Brucine as an oxidation - reduction indicator in cerimetry, 2599. See also Rao, G. G., 22, 2330, 3603.

Sastry, C. A. See Subrahmanyam, P. V. R., 3532.

Sasuga, H. See Hirano, S., 3775.

Sato, F. See Itsuki, K., 930, 1766. Satō, I. See Matsunaga, A., 4035, and Sera, K.,

Sato, Kiyoshi, and Takeuchi, K. Spectrophotometric determination of a trace amount of magnesium in pure sodium chloride with xylidyl blue, 394.

Sato, Koichi, Matsumura, Y., Miyakawa, K., and Yoshimura, S. Determination of reducing sugars in sulphite waste liquors, 2333.

Sato. M. Aluminium hydroxide and barium carbonate as carrier for lead in the presence of copper. 4194.

See also Ishibashi, Masayoshi, 1011. Sato, R. See Kanazawa, J., 1971, 4037. Sato, Y. See Noto, T., 258.

Sauciuc, A. Determination of chlortetracycline and bromtetracycline in tetracycline produced by fermentation, 4454. Colorimetric micro-deter-mination of chlorine and bromine in organic substances, 5265.

Sauer, K. H. See Feher, F., 466.

Sautier, C. Diffusion of sodium and potassium in Measurement by chromatographic separaman. tion of the radioactive elements, 2866.

Sautière, P. See Biserte, G., 673. Savage, G. M. See Eble, T. E., 1896. Savage, R. M. Assay of anti-haemophilic globulin, 3480

Savariar, C. P. See Majumdar, A. K., 340, 1269, 1350, 1767, 3694, 4242, 5203.

Savina, E. V. See Filippova, N. A., 5224.

Savinov, B. G. Infra-red absorption spectra for standardising substances used in vitamin-E synthesis, 2489.

Savitskaya, I. S., and Songina, O. A. Amperometric titrations with two indicator electrodes, 5518.

Savoia, F. Horizontal chromatography, 1991. Savostin, A. P., and Alimarin, I. P. Determination of small amounts of tantalum and niobium in

granite by the isotopic dilution method, 4227. Savvin, S. B., and Bagreev, V. V. Photometric determination of thorium in minerals by means of arsenazo III, 5200.

See also Kuznetsov, V. I., 5199, and Luk'yanov,

V. F., 3197.
Sawada, H. See Noto, T., 258.
Sawada, K. See Momose, T., 2031.
Sawicki, E., and Elbert, W. Thermochromic detection of polynuclear compounds containing

the fluorenic methylene group, 2313.

Hauser, T. R., and Stanley, T. W. Solvent effects in the spectrophotometric determination of weak organic acids in alkaline solution. Application to aromatic primary amine and carbonyl derivatives, 3343.

Noe, J., and Stanley, T. W. Detection of aralkyl and dialkyl ketones containing the -CO·CH,-

group, 4354.

Stanley, T. W., and Hauser, T. R. Detection of primary aromatic amines, 1085. Spectral detection of terminal-ring quinones, 2797.

Stanley, T. W., Hauser, T. R., and Barry, R. Isatin tests for aromatic hydrocarbons and phenols, 2301.

Sawyer, D. T. See Cole, L. G., 3283. Saylor, J. H. See Cooney, B. A., 2097. Sayun, M. G., and Tsyb, P. P. Electrolytic separation of indium, thallium, zinc and cadmium and their determination in a single sample, 1658.

Sazonova, V. A., and Leonov, V. N. Lithium tetra-p-tolylboron as a reagent for the quantitative determination of sodium, 2064.

Sazonova, Z. A. See Mikhal'chuk, B. V., 883.

Sbrolli, W. See Capaccioli, T., 1699. Sbrzesny, H. See Ziegler, M., 30, 3140, 4668. Scala, E., Beati, M., and Ruiz, G. Determination of

pentoses in plasma by Bial's reaction, 1847. Scarano, E., and Signoretti, S. Titration of weak

acids with an aluminium electrode, 4114.

— See also Mari, A., 1986. Scarborough, J. M. Infra-red spectra of diphenyl and several deuterated diphenyls, 4843.

Scardaville, P. A. See Frieser, R. G., 4358. Scarselli, V. Spectrophotometric determination of elastin, 3443. Colorimetric determination of elastin, 3444.

Scatena, M. See Scoffone, E., 2031. Schaafsma, H. J. See Schutte, R., 1191. Schachter, D. Fluorimetric estimation of mag-

nesium in serum and urine, 3388.

Schaefer, T. P. See Leane, J. B., 846.
Schaefer, H. F. Chemical microscopy of isoquinoline. Identification of the noble metals, 156. Micro-crystalline test for osmium, 160.

Schaller, A., and Mihalovics, E. Complexometric determination of the total zinc and zinc oxide content of lithopone, 3384.

Schaller, P. Determination of purity and assay of sodium lauryl sulphate. I, 179; II, 728.

Schantz, E. J. See McFarren, E. F., 1563.

Scharf, R. See Lassner, E., 107, 483, 1728, 3200, 3266, 4721, 5196.

Scharfe, G. Gas-chromatographic analysis of gases

containing hydrocarbons, 2318.

Scharrer, K., and Mengel, K. Determination of magnesium for agricultural chemical analyses, 287. Schaschkin, W. L., and Schumilin, J. C. Radio-metric determination of uranium content of earth samples, 113.

Schechter, M. S. See Giang, P. A., 4536. Scheiffarth, F., Frenger, W., and Ringelmann, R. Quantitative method of serum properdin determination with inulin, 4963.

Schenck, H.-J. See Arendt, I., 1795.
Schenck, J. R. See Washburn, W. H., 1494.
Schenk, G. H. See Fritz, J. S., 2761.
Schenk, R. U. Photometric determination Photometric determination of

2:4:6-trichlorophenol, 4846.
Scherrer, A. See Thomann, O., 775.
Scheske, F. A. See Washburn, W. H., 1494.
Scheunert, E. See Gassmann, B., 210.
Scheunlen, P. G. Quantitative determination of

small amounts of protein with an indicator, 229. Method of quantitative protein determination, 1868

Schiaffino, S. S. See Deutsch, M. J., 4498, 4500, 4501, and McGuire, J. J., 4421.

Schiele, C. See Weiner, R., 2195. Schill, G. Photometric determination of quaternary ammonium compounds with hexanitrodiphenylamine. II, 2780.

and Danielsson, B. Photometric determination of quaternary ammonium compounds with hexanitrodiphenylamine. I, 2292.

Schilling, K. Isolation and determination of partially hydrogenated fatty acids as the mercury adducts, 2484.

Schilt, A. A. See Smith, G. F., 2031. Schindewolf, U. Selenium and tellurium content of stony meteorites by neutron activation, 4753.

Schindler, G. See Grubitsch, H., 4756.
Schindler, O. See Krauss, M. T., 3879.
Schinzel, S. Determination of EDTA in the presence

of condensed phosphates, 2781.

Schirren, C. See Harke, W., 4913.

Schiweck, H. See Weidenhagen, R., 3495. Schlenk, H. See Mangold, H. K., 1127.

Schlögl, K. Detection of organic acids on paper

chromatograms, 1790.

Schluter, E. C., jun. Trace analysis for total nitrogen in petroleum fractions. Adsorption - ter Meulen method, 1820.

Parry, E. P., and Matsuyama, G. Determination of sulphur in petroleum products by hydrogenation, 4865.

Schmalz, E. O. See Kimmer, W., 2862. Schmauch, L. J., and Dinerstein, R. A. of thermal-conductivity cells in gas chromatography, 5093.

Schmid, A., and Zipf, K. Flame-spectrophotometric determination of strontium and calcium in bone,

Schmid, L. See Woidich, K., 181, 4879.

Schmid, O. J., Oriol-Bosch, A., and Voigt, K. D. Separation of synthetic steroid esters by paper electrophoresis, 1153.

Schmid, P. See Kleber, W., 747, 1572, 3994, 4485

Schmid, R. W. See Reilley, C. N., 3107.
Schmidt, E. See Schön, H., 4922.
Schmidt, F. See Herr, W., 2758.
Schmidt, H. Alternating-current and square-wave polarography, 4605.

Schmidt, Herbert. Determination of sorbic acid,

Schmidt, J. See Redinger, L., 1710.
Schmidt, W. See Konopicky, K., 4641, 5173.
Schmidt-Küster, W.-J. See Schultze, G. R., 3050.
Schmitz, H., and Walpurger, G. Separation of phosphoric acid esters by ion-exchange chromatography, 2789.

Schmitz, W. See Radmacher, W., 1392.

Schmulbach, C. D. Quantitative determination of

traces of pyrophosphate in orthophosphates.

Schneer, A. Titrimetric determination of zirconium in "red mud", 4719.

and Hartmann, Hilda. Volumetric determination of zirconium. I. Permanganate method, 4203: II. Chromate method, 5193.

Schneider, F., Emmerich, A., Reichel, C., and Rother, H. Paper-chromatographic determination of raffinose, 3496.

Reinefeld, E., and Forth, H. Nitrogenous non-sugars. III. Determination of glutamine in

sugars. III. Determination of glutamine in sugar-factory juices, 3499.
Schneider, R. A. See Helmholz, H. R., 1021.
Schneilen, C. G. T. P. See Jansen, H. E., 1928.
Schnepfe, M. See Grimaldi, F. S., 951.
Schnier, H. See Ritter, H., 2835.
Schnitzer, M. See Hoffman, I., 5046, and Wright,

J. R., 5046.

Schnopper, H. W. See Parratt, L. G., 839. Schnopper, I., Broussard, J. O., and LaForgia, C. K.

X-ray powder diffraction data of azoic coupling components, 1827. Schnurbusch, H. See Kaufmann, H. P., 1936.

Schöber, G., and Gutmann, V. Polarography in

anhydrous ethylenediamine, 4603.

Scholes, I. R. See Wood, D. F., 1716.
Scholler, R., Longchamps, J., and Jayle, M. F.
Fluorimetric determination of phenolic steroids in acid medium, 4975.

Schomburg, G., Köster, R., and Henneberg, D. Boron compounds. II. Gas-chromatographic analysis of trialkylboranes involving spectrometric measurements, 2790.

Schön, H., Ordnung, W., and Schmidt, E. Determination of 5-hydroxyindol-3-ylacetic acid in urine, 4922.

Schöniger, W. Quantitative organic elementary micro-analysis. II, 1046. Quantitative micro-determination of functional groups in organic compounds, 1776. [International Symposium on Microchemistry. Birmingham, 1958.] Microanalytical determination of carbon and hydrogen. 3102; Analytical procedures for the flask combustion method, 3102.

Schooneveldt-van der Kloes, C. J. See Salomon, G., 5327

Schormüller, J., and Hofmeister, E. Separation of amino acids on ion-exchange columns, 3902.

Schrader, B., Nerdel, F., and Kresze, G. Device for taking the Raman spectra of solids. Raman spectra of urea molecular compounds, 3064.

Schramm, G., and Mohr, E. Purification and determination of neuraminidase from Vibrio cholerae.

Schramm, H. M. See Hanna, J. G., 2760. Schrauwen, J. A. M. See Linskens, H. F.,

Schreiner, L. See Riedler, K., 3132. Schrenk, W. G. See Shellenberger, T. E., 4123.

Schriever, K. Reducing agents in the photometric determination of phosphate in urine, 2873. Determination of reducing agents by means of the phosphomolybdenum blue procedure, 3798.

Schrimpf, H. O. See Roth, H. J., 4366. Schröder, E. Chromatography in the analysis of plastics, 3851. Ion-exchange resins in plastics analysis, 4385.

Schroeder, H. See Lieser, K. H., 5244. Schroeter, L. C. See Higuchi, T., 2927. Schubert, J., Anderegg, G., and Schwarzenbach, G. Complexones. XXXI. N-(2-Hydroxycyclohexyl)ethylenediamine-NN'N'-triacetic acid, 3608.

Schulknecht, W. See Feichtinger, H., 5118. Schuldiner, S. See Neihof, R., 4568. Schulek, E., and Barcza, L. Chemistry of selenium and selenium compounds. II. Iodimetric determination of selenocyanate, 2709; III. Micro-determination of selenite through cyanogen bromide. 2709; IV. Detection and determination of minute amounts of selenite in presence of selenate, 2709.

- and Burger, K. Iodate method for the determination of iodides, with phenazone to absorb

iodine, 509.

- Burger, K., and Fehér, M. Can the acid-containing receiver in the Kjeldahl distillation be replaced by one charged with boiled water?, 168. Determination of ammonia, cyanide, nitrite and nitrate when present together, 451.

and Endröi-Havas, A. Gravimetric determina-

tion of phosphate, 5207.

and Maros, L. Analysis of aldehydes. Iodimetric determination of glyoxal by means of its a-hydroxysulphonate (aldehyde bisulphite). 576. Analysis of 1:2-glycols and polyhydric compounds. II. Iodimetric determination of tartaric acid in the presence of citric acid via the glyoxylic acid formed by periodate oxidation, 2271.

See also Barcza, L., 4237, Burger, K., 3807, 5284, and Maros, L., 1786, 3307, 5275.
 Ichulte, K. E. Use of radioactive isotopes in

Schulte, K. E. pharmaceutics, 1885.

Schultz, L. H., and Myers, M. Milk test for ketosis in dairy cows, 270.

Schultze, G. R., and Schmidt-Küster, W.-J. Separating efficiency of silica gels in gas chromatography,

Schulz, E. G See Copeland, L. E., 1769.

Schumacher, E. Mass spectrometer for chemical use. 1230

and Friedli, W. Radiometric method for the quantitative micro-determination of metal ions.

Schumilin, J. C. See Schaschkin, W. L., 113. Schutte, R., and Schaafsma, H. J. Water bath for the determination of the biochemical oxygen

consumption in 5 days at 20° in water and

effluent water, 1191.
Schutz, M. See Massart, R., 1959.
Schwab, C. M. See Altshuller, A. P., 3282.

Schwabe, K., and Jehring, H. Alternating-current polarography of surface-active organic compounds and the influence of solvents, 4377.

Schwartz, B. W. See Gimbel, L. S., III, 2982. Schwartz, C. H. See Corey, R. C., 429.

Schwartz, U. H. See Corey, R. C., 429.
Schwartz, D. P. See Corbin, E. A., 5278.
Schwartz, E. See Clayton, M. M., 1500.
Schwarz, H. P., Dreisbach, L., Stambaugh, R.,
Kleschick, A., and Barrionuevo, M. Chromatography of the phospholipids of rabbit skin, 5364

Schwarzenbach, F. H. Photographic method for the detection of cysteine, 1139.

Schwarzenbach, G. Relationships between metal-complex stability and the structure of the complexing agents, 3609.

See also Schubert, J., 3608.
 Schwendeman, R. H. See Sternberg, J. C., 3928.
 Schwendiman, L. C. See Rieck, H. G., 3103.

Schwick, G. Application of immuno-electrophoresis to biochemical and clinical problems, 3920.

Sciarra, J. J. See Monte-Bovi, A. J., 1241. Scoffone, E., Turco, A., Chillemi, D., and Scatena, M. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] C-Endgroup determination in proteins using ammonium thiocyanate labelled with sulphur-35, 2031.

— See also Turco, A., 2031. Scott, B. A., and Williamson, A. G. Effect of the carrier gas on the sensitivity of thermal-conductivity detectors in gas chromatography, 820.

Scott, F. A., and Dierks, R. D. Photometer for continuous determination of uranium in radioactive process streams, 4572.

See also Peekema, R. M., 987.

Scott, I. A. P. See Magee, R. J., 2222, 3670. Scott, J. C. See Marcó, A., 2585. Scott, P. G. W. Gas-liquid chromatography, 2533. Scott, R. P. W. Nylon capillary columns for use in gas - liquid chromatography, 815. Cathode-ray presentation of gas - liquid chromatograms, 4062.

Scotti, V. G., Mueller, J. I., and Little, J. J. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part 2. Instrumentation, remote-control techniques and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Instrumenta-tion for X-ray diffraction studies of highly radioactive samples, 3103.

See also Mueller, J. I., 3103. Scribner, B. F. [Review of fundamental developments in analysis.] Emission spectroscopy, 5125.

— See also Margoshes, M., 307. Scroggie, L. E., and Dean, J. A. Extraction of zinc with tri(isooctyl)amine in isobutyl methyl ketone, and colorimetric determination with zincon in the organic phase, 2083.

Seabra, A. V. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Absorptiometry in the identification of asphaltic bitumens: the influence of their constituents, 2031.

Seager, S. L. See Stewart, G. H., 2538.

Seaman, W. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Simple scintillation counter for chemical analysis with radioactive tracers, 2031.

Seamer, P. A. Estimation of microgram quantities of iron in culture medium using bathophen-

anthroline, 1352.

Searcy, R. L., and Bergquist, L. M. Colour reaction the quantitation of serum cholesterol, for 4972

See also Ware, A. G., 1525. Sebestian, I. See Zbořil, V., 4399. Seckarova, H. See Mlejnek, O., 5332. Secor, G. E. See White, L. M., 1121.

Secrest, P. J. Determination of the metal contents

of paint driers by flame photometry, 201.

and Kosciesza, B. Determination of p-tert,-butylbenzoic acid in coconut oil-type modified alkyds, 1463.

- Pawley, J. A., and Lucchesi, C. A. Ultra-violet spectrophotometric determination of 1:10-phenanthroline, 3834.

Sedivec. V. Photometric determination of esters of acetic acid in the atmosphere, 1584. Photometric determination of acrylic and methacrylic acid ester monomers in the atmosphere, 5039.

and Flek, J. Determination of tetraethyl-lead in petroleum, 615. Volumetric determination of carbon disulphide as diethyldithiocarbamate, 3213. Determination of styrene as pseudonitrosite, 5294.

Sediáček, B. A. J. Semi-micro complexometric method for the determination of propyl gallate in fats, 4014.

- Tichá, A., and Hátle, J. Determination of propyl gallate in lard, 3510.

Sedzimir, J., Gaj, A., and Kubisz, K. Determination of barium, calcium and sodium in lead alloys,

Seed. M. G. Electronic trigger unit for source units,

Seefield, E. W., and Robinson, J. W. Determination of low sulphur concentrations in oils and organic solids, 3840.

Seeger, B. See Mahr, C., 3136. Seehoter, F. See Barkemeyer, H., 4996. Seely, G. R., Oliver, J. P., and Ritter, D. M. Gasliquid chromatographic analysis of mixtures containing methyldiboranes, 3322.

Segatto, P. R. Analysis of boron in borosilicate glasses by neutron transmission, 5169.

Segel, K.-H. Spot reaction for cardiac glycosides, 3953.

Seher, A. Analytical detection of synthetic anti-oxidants in edible fats. II. Separation and identification of synthetic antioxidants by means of thin-film chromatography, 1580. Quantitative paper chromatography of fatty acids. II. The photometric method, 2999.

Seibold, M. Ion exchangers for the pre-treatment of serum for the determination of aluminium with Eriochrome cyanine R, 4903. Determination of aluminium in blood serum with ion-exchange resins and Eriochrome cyanine R, 4904.

Seibold-Blankenstein, I. See Lippert, E., 3069. Seifert, J., and Simek, J. Polarographic determination of rhodium, 1380.

Seiler, R. See Wolffgang, H., 1990. Seitz, R. L. See Silverman, L., 151, 2238. Sekerskii, S., and Kotlinskaya, B. Separation of mixtures of niobium and zirconium by partition chromatography with alternation of phases, 4746.

Seki, T. Chromatographic separation of some Δ*-3-oxosteroids, 3454. Chromatographic separa-tion of N-2:4-dinitrophenylhydrazides of lower fatty acids, 5281.

Sekiguchi, K. Metal chelate compounds of tetracyline derivatives. VIII. Colorimetric determination of tetracycline with boric and sulphuric

acids, 711.

Seliger, H. H., and Agranoff, B. W. Solid scintillation counting of hydrogen-3 and carbon-14 in paper chromatograms, 1660.

Seligman, A. M. See Nachlas, M. M., 4442.

Seligson, D. [Symposium on quality control. 10th Anniversary Meeting, American Association of Clinical Chemists, Iowa City, U.S.A.] System of microchemistry for the hospital laboratory designed for maintenance of a high standard of performance, 849.

Selim, R. G., and Lingane, J. J. Coulometric titration with higher oxidation states of manganese. Electrolytic generation and stability of tervalent manganese in sulphuric acid media, 3741.

Selyanina, O. K. See Polukarov, A. N., 3203.

Selzer, G. See Ariel, M., 3220. Semel, S., Laccetti, M. A., and Roth, M. Colorimetric determination of hexahydro-1:3:5-trinitro-sym.-triazine and octahydro-1:3:5:7-tetranitrosym.-tetrazine in admixtures, 632.

— See also Laccetti, M. A., 584. Semenenko, K. A. See Tarasevich, N. I., 3210.

Semenov, S. M. See Dimitrieva, V. S., 3475.

Semerano, G. [International Symposium on Microchemistry. Birmingham, 1958.] Polarography in microchemistry, 3102

Seminova, V. A. See Torocheshnikov, N. S., 4817. Sen, A. B., and Misra, S. Gravimetric estimation of zirconium by 3-ethylphenoxyacetic acid.

Sen, B. Spot test for gold, 31. Spectrophotometric determination of gold with phenyl α-pyridyl ketoxime, 1277. Spot test for palladium, 3770, Gas - liquid partition chromatography, 4559.

Sengupta, A. Fatty-acid composition of the Reichert - Meissl and Polenske fractions of butter Fatty-acid composition of the fat and its admixtures with other fats, 271.

Sen Gupta, J. G. See Majumdar, A. K., 1031, 1383, 2244, 5257

Sengupta, P. N., Mitra, S. N., and Roy, B. R. Chromatographic detection of opium in tea and other

foods, 1889. Senise, P., and Sant'Agostino, L. Determination of germanium after extraction by isobutyl methyl ketone. II, 68. Determination of niobium in the presence of tantalum after extraction with isobutyl methyl ketone, 4744.

Senkowski, B. Z., Wollish, E. G., and Shafer, E. G. E.
Determination of organically bound fluorine,

See also Napoli, J. A., 3522.

Seno, S. See Maruyama, M., 1404. Sensabaugh, A. J. See Robinson, W. T., jun.,

Senti, F. R. See Shaefer, W. C., 2963.

Sentyurin, I. G. See Gusev, N. I., 3096. Sera, K., Matsunaga, A., Murakami, A., Sato, I., Yamashita, K., and Yoshimori, H. Qualitative analyses of organic phosphorus pesticides by colour reactions and simple detection, 4034.

Serebrennikova, M. T., and Tolstikova, E. I. Potentiometric determination of free acid in the presence of salts of tervalent chromium, 479.

Serebryakova, G. V. See Bozhevol'nov, E. A.,

Serena, B. See Gold, E. M., 4439.

Sergeant, G. A., and Wood, R. Determination of DDT residues in foodstuffs, 1171.

Belgeev, E. A., Margolin, L. S., Stepanov, P. A., Belobragina, M. V., and Zhukova, N. A. Spectro-graphic analysis of minerals by chemico-thermal concentration of the elements, 3274. - and Stepanov, P. A. Spectrographic analysis

of metallic samples for mercury, 1293. Séris, G., Vernotte, P., Clave, A.-M., and Kohlmann, P. Apparatus for the analysis of gaseous impurities in gases, 4059.

- Vernotte, P., Klein, -., and Clavé, A. M. Analysis of impurities in gases. Determinations of oxygen in an inert gas and of higher oxides of nitrogen in nitrous oxide, 4747.

Serpinet, J. Vapour-phase chromatography and mass spectrography of the heavy products of the pyrolysis of chlorodifluoromethane, 569.

— See also Buzon, J., 1995.

Serrano Berges, L. Micro-determinations in nonaqueous media, 4637

Servais, A. See Fripiat, J. J., 4706. Servello, V. See Gattorta, G., 785. See Gattorta, G., 785.

Seryakova, I. V. See Kuznetsov, V. I., 338.

Sesták, Z. Paper chromatography of chloroplast pigments, 649.

Setkina, O. N. See Aleskovskii, V. B., 873.

Sevela, M., and Továrek, J. Determination of lactic dehydrogenase, 1880.

Sezaki, H. Determination of pyrazinamide. Determination of pyrazinamide, isoniazid and other metabolites in urine, 644; VII. Determination of 4-pyrazinamidosalicylic acid and 1-pyrazinoyl-2-isonicotinoylhydrazine and related compounds, 644.

Sfat, M. R. See Martin, E. G., 2981.

Shabtai, J. See Pinchas, S., 2807. Shabter, W. C., Wilham, C. A., Dimler, R. J., and Senti, F. R. Potentiometric titration of mercapto groups in wheat gluten with iodine, 2963

Shaler, E. G. E. See Senkowski, B. Z., 1774.
Shaler, M. R. Direct-reading viscometer, 1988.
Shalershtein, I. Ya., Bondar', V. V., Malakhova, S. I.,
Khamatova, A. T., and Tsarevskaya, E. A.
Determination of nitrates, 452.

Shain, I., and Svoboda, G. R. Application of constant-current potentiometry to non-aqueous titrations of weak acids, 3091.

Shakhova, P. G. See Yurist, I. M., 1669, 3272. Shakir, K. See Zaki, M. R., 5198. Shalpÿkov, A. Quantitative determination of

aluminium by the width of spectral lines, 3664.

Shamaev, V. I. See Zyyagintsev, O. E., 2708.

Shamakhmudova, T. B. See Zhdanov, A. K.,

Shanahan, C. E. A., and Jenkins, R. H. Determination of carbon and sulphur in steel, 4280. See also Borrowdale, J., 1007.

Shantai, J., Herling J., and Gil-Av, E. Gas - liquid partition chromatography of isomeric alkylcyclopentenes and alkylidenecyclopentanes, 1438.

Shapiro, G. J. See Brenner, M. W., 3996. Shapiro, I. See Wilson, C. O., jun., 3812. Shapiro, L. Design of Teflon vessel for decomposition of rock samples, 1193. Photometric determination of low-level magnesium in rocks, 2077. Deter-

mination of fluorine in phosphate rocks, 4768.

and Brannock, W. W. Multiple pipetting device, 4041.

Shapiro, L. M. See Tananaev, I. V., 3265. Shapiro, M. Ya. Photometric method for the determination of nickel, 1024.

Shapoval, V. I. See Skobets, E. M., 5516.

Sharada, K. See Murthy, A. R. V., 5219. Sharkey, A. G., jun. See Friedel, R. A., 82. Sharma, B. Pre-oxidation by iodine chloride -

potassium hydroxide, and use of iodine chloride end-point in the determination of hydrazine, thiocyanate, thiosulphate and glucose, 4652. Determination of thallium with iodate in the presence of mercuric ions and with iodate and permanganate via bromide, 4690.

Sharma, N. N., and Mehrotra, R. C. Mechanism of oxidation by cerate-chromate reagent, 4639. Cerate oxidimetry. V. Oxidation of mixtures of

citric and oxalic acids, 4827. Sharma, R. K. See Verma, M. R., 965. Sharma, S. S. See Verma, M. R., 958. Sharman, D. F. See Saffran, M., 5079.

Sharp, R. F., Elliot, J. S., and Lewis, L. Determina-tion of carbonate in biological solids, 1480.

Shaska, V. S. See Tsvetkov, V. N., 5487. Shat'ko, P. P., Vasina, N. T., Podol'skaya, V. I., Malkina, L. A., and Ponamareva, T. F. Determination of micro amounts of arsenic with a bivalent chromium salt, 948.

Shaw, J. H. See Birkeland, J. W., 772.
Shaw, W. H. C., Jefferies, J. P., and Holt, T. E.
[Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Determination of vitamin D and related compounds, 2031.

Shaw, W. M. Nitric - perchloric acid oxidation for sulphur in plant and animal tissues, 3871. Shcherbakov, V. G., and Stegendo, Z. K.

mination of titanium, tantalum and niobium in carbide mixtures containing tungsten, 4201.

Sheath, J. B. Colorimetric estimation of 17-oxosteroids in urine, 1150. Chromatography of urinary ketosteroids, 1151.

Sheid, B. See Natelson, S., 4901

Sheinina, G. A., and Kler, M. M. Spectrographic determination of rubidium and caesium in rocks and minerals by the method of additions, 1265.

Shekleton, M. C., and Haynes, W. C. Microbiological assays of amino acids with several strains of Leuconostoc mesenteroides, 2394.

Shekosky, J. M. See McChesney, E. W., 3970. Shelemina, V. M. See Podmoshenskii, I. V., 2552. Shellenberger, T. E., Pyke, R. E., Parrish, D. B., and Schrenk, W. G. Flame-photometric emission of rubidium in an oxygen - acetylene flame, 4123.

Shelley, R. N. See Helf, S., 4620. Shelpakova, I. R. See Yudelevich, I. G., 2057. Shelton, J. P., and Walsh, A. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Application of atomic absorption spectra to chemical analysis, 2031.

Shelton, J. R., and McDonel, E. T. Apparatus for quantitative gas-absorption measurements, 2517. Shen, C. Y., and Herrmann, R. A. Vapour pressure

micro-method, 5072.

Shen, H.-S. See Alimarin, I. P., 4174.
Shergina, N. I., Kuznetsova, V. P., Nachmanovich,
A. S., and Kalechits, I. V. Ultra-violet absorption spectra of phenols, 2306. Ultra-violet spectra of phenolic compounds, 2795.

Sherma, J., and Rieman, W., III. Solubilisation chromatography. III. Ethers, carboxylic acids and hydrocarbons, 172.

Sherman, I. R. Chlorinated solvents for determination of crude fat in feeds and meat products, 1913.

Sherwood, P. T. Determination of the cement or lime content of stabilised ferruginous soils, 5048.

Sheth, P. B. See Haycock, R. P., 1891, 1968.Sheveleva, N. S. See Korshun, M. O., 4307. Shevkoplyas, A. G. See Margolis, E. I., 4306.

Sheyanova, F. R. See Korenman, I. M., 885, 4163. Shibata, N. See Kitagawa, H., 536, 1708. Shibata, Shozo, Takeuchi, F., and Matsumae, T. Spectrophotometric determination of landary of the state of the thanum with neothorin [arsenazo], 1692.

— See also Ishibashi, Masayoshi, 132, 1747, 1793. Shibata, Susumu. See Iuchi, I., 3878. Shideler, M. E. See Silverman, L., 2304. Shigematsu, T. Fluorimetric determination of

Shigematsu, T.

gallium in metallic germanium, 53.

and Tabushi, M. Solvent extraction of beryllium as acetylacetonate, 388. Spectrophotometric determination of beryllium with acetylacetone and its application to the analysis of aluminium alloys, 389. Carrier-free separation of phosphorus-32 by solvent extraction, 1709. Spectrophotometric determination of uranium with acetylacetone, 1733.

See also Ishibashi, Masayoshi, 132, 1305, 1747,

1793, 4253,

Shilov, G. I. See Frum, F. S., 890.

Shimanouchi, T. See Suzuki, S., 3904.

Shimizu, M., and Ichimura, S. Detection and determination of meprobamate. I.

partition chromatography, 727.

- Ichimura, S., and Mori, H. I. determination of meprobamate. Detection and III. Determination of excreted meprobamate in urine, 727.

Shimoe, D. See Sudo, T., 169.

Shinagawa, K. See Matsunaga, A., 4035. Shinagawa, M., Murata, T., and Okashita, H. Polarographic analysis of uranium. Separation of concomitant ions with anion-exchange resin,

Shingler, A. J., and Carlton, J. K. Separation and determination of theophylline, theobromine and

caffeine, 2427.

Shinra, K. See Kato, Takeshi, 2495. Shiota, M., Utsumi, S., and Iwasaki, I. Colorimetric determinations by the use of thiocyanate. XVII. Colorimetric determination of a trace of bromide by a catalytic method, 2221. See also Iwasaki, I., 2221.

Shirai, H. Effect of dissolved oxygen on alternating-

current polarography of some metal ions, 1654.

Shiraishi, I., and Saito, M. Determination of a minute quantity of selenium in pyritic ores, 106. Shirley, E. L. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Rapid analysis of dissolved gas in high-pressure coolant water, 335.

Shishatskaya, L. P. See Levikov, S. I., 2560.
Shishatskaya, L. P. See Levikov, S. I., 2560.
Shishkina, N. I. See Sakharova, Ya. G., 3239.
Shkol'nic, R. Ya., and Doman, N. G. Separation of metabolic products into fractions by paper chromatography, 4945.

Shkrobot, E. P. See Busev, A. I., 4168, and Ginzburg, L. B., 3673.
Shlepkova, Z. I. See Pedos, F. Z., 2546.
Shlyapochnikov, V. A. See Egorov, Yu. P., 2755.
Shmulyakovskii, Ya. E. Colorimetric determination of platinum in catalysts, 548. Determination of normal, secondary and tertiary butyl alcohols,

Shneider, L. A. Determination of lithium in spodumene ores, 362.

Shoeb, Z. E. See Kaufmann, H. P., 4013. Shoemaker, C. J. See Rosenberger, H. M., 1456,

Shōji, H. See Yamaguchi, K., 3467. Shoji, T. See Momose, T., 2311.

Shome, S. C. See Sinha, S. K., 3196, 3267.

Shong, Y.-H. See Huang, M.-C., 1887. Shoolery, J. N., Goodman, E. I., and Littman, J. Analysis of bromine trifluoride, bromine pentafluoride and uranium hexafluoride utilising highresolution nuclear magnetic resonance spectra,

Shore, P. A. [Symposium on catecholamines.] A simple technique involving solvent extraction for estimation of noradrenaline and adrenaline in tissues, 4938.

Burkhalter, A., and Cohn, V. H. Fluorimetric assay of histamine in tissues, 3424.

Shorland, F. B. See Hansen, R. P., 272, and Hawke,

J. C., 2487.

Short, J. F. See Jackson, N., 501.

Shoup, R. E. Hydrolysis and determination of phosphates, 4732.

Shpinel', V. S. See Vinogradov, A. V., 2133. Shrimal, R. L. Volumetric determination of silver in cobalt - silver mixture, 1671

Shteinberg, A. N. See Borovskii, I. B., 924.
Shtokalo, M. I. See Babko, A. K., 1720.
Shuler, W. E. Infra-red spectroscopy with the Beckman DU spectrophotometer, 2007.

Shul'gina, M. N. See Vladimirov, L. V., 962. Shults, W. D. Controlled-potential coulometric determination of europium, 62.

— See also Feldman, C., 3103.
Shultz, J. L. See Friedel, R. A., 82.
Shumskaya, A. I. See Usatenko, Yu. I., 4133.
Shvangiradze, R. R. Spectrographic analysis of mixtures of rare-earth-metal oxides, 2653

Shvarts, D. M., and Granfel'd, A. I. Chemico-spectrographic determination of cobalt, copper, tin and zinc impurities in high-purity nickel, 2239.

and Nilova, I. S. Spectrographic analysis of high-purity thallium, 2103.

Shvedov, V. P., Pavlova, N. A., and Bulatov, M. I. Co-precipitation of zirconium with ceriumIII oxalate by homogeneous precipitation, 2676.

and Rosyanov, S. P. Paper-chromatographic determination of phosphoric acid and its monoand di-butyl esters, 2298.

Ten, T., and Stepanov, A. V. Separation of some fission isotopes by focusing ion-exchange, 4115. Shwachman, H. See Green, M. N., 5380.

Sicha, M. Nephelometric determination of oxygen in steel, 1367.

Siddappa, G. S. See Beerh, O. P., 1919. Siegel, H. A. See Saifer, A., 215. Siegel, J. M., Montgomery, G. A., and Bock, B. M. Ultra-violet absorption spectra of diphosphopyridine nucleotide and its analogues, 223.

Siekierski, S. Determination of mono- and di-butyl phosphate in tributyl phosphate, 2788.

Sieper, H. See Korte, F., 5000.
Siesjö, B. See Hertz, C. H., 2874.
Sievert, H. W., Lipton, S. H., and Strong, F. M.
Quantitative determination of cyanoacetic acid as an enzymic product of β-aminopropionitrile, 4440.

Sigalla, J. See Herbo, C., 2031. Signoretti, S. See Scarano, E., 4114. Sijde, D. van der, and Flines, J. de. Apparatus suitable for applying fairly large quantities of

solutions on paper chromatograms, 1603.

Silaeva, E. V. See Stepin, V. V., 1334.

Silbereisen, K., and Weymar, C. Electronic measurement of the oxygen dissolved in beer, 2988. Silk, R. S. Isolation and quantitative determination

of oil-soluble colours in foods, 1567. Silker, W. B. See Kirby, L. J., 3103.

Silva Carmo, M. M. See Pimenta, A. A. S., 2031. Silverman, G. J., Wolin, A. G., and Kosikowski, F. V. Salt analysis in cheese, 1918.

Silverman, H. P., and Bowen, F. J. Pyrohydrolysis of cryolite and other fluoride-bearing materials,

Silverman, L., and Bradshaw, W. G. Purification of tetrabutylammonium iodide for polarographic use, 2580.

- Bradshaw, W. G., and Shideler, M. E. Tetra-hydrofuran - water mixture as a polarographic solvent. Determination of the lower polyphenyls, 2304.

and Seitz, R. L. Determination of microgram amounts of cobalt in sodium metal. 2-Nitroso-1-naphthol spectrophotometric method. Spectrophotometric determination of cobalt in sodium metal, 2238.

— See also Houk, W. W., 134. Simbirtseva, G. D. Determination of pepsinogen

(uropepsin) in urine, 239.

Šimek, J. See Seifert, J., 1380.

Simkova, A., and Haller, A. Determination of starch in bandages, 4882.

Simmer, H., Simmer, I., and Beck, H. Determina-tion of 4-allyl-NN-diethyl-2-methoxyphenoxyacetamide in human material, 4914.

Simmer, I. See Simmer, H., 4914. Simmonds, D. H., and Rowlands, R. J. Determination of amino acids separated on several ionexchange resin columns, 4424.

Simmonds, R. A. Storage of blood samples on kieselguhr and the determination of cholinesterase, alkaline phosphatase and urea, 4985.

Simmonin, M.-P. Mercury cathode having a constant and renewable surface, 5124.

Simon, H., Daniel, H., and Klebe, J. F. Measure-ment of carbon-14 and hydrogen-3 in the gas phase, 564.

Simons, L. M. See Dijck, L. A. van, 2005. Simonyi, I., and Tokár, G. Titrations in anhydrous medium. IV. Determination of salts of organic acids in acetic acid medium with a mixture of chloroaluminium isopropoxide and its hydro-

chloroaluminium isopropoxide and its hydro-chloric acid complex, 4355.

Simova-Filippova, L. See Budevskil, O. B., 3152.

Simpson, J. S. See Adamson, D. C. M., 3102.

Sincher, H. J. See Fina, L. R., 2518.

Sinclair, D. A. See Nobbs, J. M., 4667.

Singer, E. J. See Hutterer, F., 4951.

Singer, T. P. See Rendina, G., 1530.

Singh, A. See Singh, B., 2050.

Singh, B., and Kashyap, G. P. Iodine trichloride as volumetric reagent. I. Determination of volumetric reagent. I. Determination of reducing agents, 855

- Sahota, S. S., and Mankotia, M. S. Complexometric estimation of ferric iron, 4781.

- Sahota, S. S., and Singh, A. Perbenzoic acid as volumetric reagent. I. Determination of inorganic reducing agents, 2050.

Singh, D. See Kolthoff, I. M., 3913.

Singh, E. J., and Dey, A. K. Chromatographic study of anionic complexes. IV. Separation of some ions in the presence of tartrate, with ethanol as solvent, 4111.

Singh, J. See Paul, R. C., 1247, 1651.

Singh, K., and Patnaik, D. Separation of uranium

from iron and vanadium, 3727.

- Sahoo, B., and Patnaik, D. Photolytic separation of uranium from aluminium and from a mixture of thorium, cerium and lanthanum, 3728.

Singh, R. P. Diphenylthiovioluric acid as a reagent

for gravimetric estimation of metals. II. Estimation of iron, 131.

Singhal, S. P. See Jain, B. D., 343, 5202. Singleton, T. C. See Kenney, R. L., 2314.

Singliar, M., Bobák, A., and Brida, J. Gas - liquid chromatographic separation of chloro derivatives of propane and propene, 5266.

Sinha, A. Separation and quantitative estimation of sulphanilamide and allied drugs in blood and urine

by paper chromatography, 3403.

Sinha, S. K., and Shome, S. C. Gravimetric determination of thorium and cerium with N-benzoyl-N-phenylhydroxylamine, 3196. Gravimetric determination of cobalt and nickel, and their separations from copper, with N-benzoyl-Nphenylhydroxylamine, 3267.

Sinyakova, S. I., and Klassova, N. S. Spectrophotometric study of uranium solutions. II. Spectrophotometric determination of uranium in ores and minerals as thiocyanate after extraction with ethyl methyl ketone, 2207.

Sissons, D. J. See Kieser, M. E., 4560. Sivadjian, M. J. Determination of very small quantities of water by hygrophotography, 4657. Siwecka, J. Colorimetric determination of traces of bromine in selenium for rectifiers, 474.

Sixma, F. L. J. See Dirkx, I. P., 5111.
Sjoerdsma, A., and Hanson, A. Determination of e-aminohexoic acid in urine by means of highvoltage paper electrophoresis, 3433.

Oates, J. A., Zaltzman, P., and Udenfriend, S. Identification and assay of urinary tryptamine: application as an index of mono amine oxidase inhibition in man, 3426.
- See also Mitoma, C., 3431.

Sjöquist, J. Determination of hexosamines as phenylthiocarbamoyl derivatives, 2889. Determination of N-terminal amino acids in peptides, 2896.

Sjöström, E., and Randell, A. Ion-exchange separation method for micro-determination of tropane alkaloids in the presence of morphine, 1890

Sjövall, J. Determination of bile acids in bile and duodenal contents by quantitative chromatography, 1496.

Skaar, O. B., and Langmyhr, F. J. Spectrophotometric determination of germanium with 1:1'dianthrimide, 2664.

Skahan, D. J. See Brown, R. A., 2029. Skálová, A. See Květon, R., 2857. Skalska, S., and Held, S. Determination of aluminium, silicon and copper in calcium by the "single addition" method, 38.

Skarżyński, J., Panusz, H., and Greger, J. Influence of anions present in biological materials on the determination of sodium, potassium and calcium by flame photometry, 203.

Skatshokova, X. See Goranov, I., 2898.

Skaupy, F., and Herrmann, A. Volumetric and gravimetric investigations of cobalt powder, 146.

Skelding, A. A., and Ashbolt, R. F. Densitometric determination of methanol in formalin, 2269.

Skelly, N. E. See Stewart, R. D., 3858.
Skerrett, E. J., and Baker, E. A. Colorimetric determination of dieldrin in extracts of coffee bark, 793. Micro-determination of endrin, 4538. See also Baker, E. A., 5057.

Skertchly, A. Design and performance of a rapid-scanning X-ray diffractometer, 4072.

Skewes, H. R. Determination of molybdenum and

its application in the hydrometallurgy of copper, 3225.

Skinner, J. G. See Claudy, H. N., 1217.

Skipski, V. P., Arfin, S. M., and Rapport, M. M. Identification of 2-hydroxystearic acid in spinal cord phrenosine by chromatographic separation of hydroxy fatty acids, 216. Paper chromatography of saturated, unsaturated and hydroxy fatty acids, 5451.

Sklyarenko, I. S. See Gusev, N. I., 3096. Skobets, E. M., and Shapoval, V. I. Oscillographic polarography with an amalgamated silver

electrode, 5516.

Skogan, O. See Halse, M., 3111.

Skolik, J. Elution apparatus for paper chromatography, 5080.

Skorko-Trybuła, Z. See Marczenko, Z., 4800. Skornyakov, G. P., Motova, Z. A., Chukina, T. P., Romashenko, A. R., and Novgorodtseva, A. T. Spectrographic analysis of cobaltic oxide for

impurities, 1372.

Skotnikov, S. A. See Borovskii, I. B., 449.

Skrentny, B. A. See Tourtellottee,

Skupp, S. J. See Kibrick, A. C., 3520.

Skvortsova, A. B. See Petrova, L. N., 573. Sládeček, J. Catalytic combustion as a detection

method in gas chromatography, 5095.

Sladky, R. E. Determination of metallic impurities in uranyl nitrate solutions by X-ray fluorescence,

Slater, T. F., and Planterose, D. N. Assay procedure for a succinate - neotetrazolium reductase system,

Slaughter, C. See Flavin, M., 3432.

Slaymaker, S. C. See Peurifoy, P. V., 2300.

Slee, L. J., Phillips, G., and Jenkins, E. N. Determination of small amounts of neptunium in plutonium metal, 2213.

Sleisenger, M. H. See Pert, J. H., 4071. Slobodskaya, P. V. See Gerlovin, Ya. I., 5509.

Slocumb, C. H. See Crutchfield, C. A., 2367.
Sluyterman, L. A. A. Effect of oxygen upon the

micro-determination of histidine with the aid of the Pauly reaction, 4431.

Slyusareva, R. L. See Karabash, A. G., 2641. Smaa, M. L. See Kivirikko, K. I., 4427. Smales, A. A., Mapper, D., and Wood, A. J. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Determination by radioactivation of small quantities of nickel cobalt and copper in rocks, marine sediments and meteorites, 2031.

See also Atkins, D. H. F., 858, and Irving, H., 2031.

Smetana, B. See Matrka, M., 2812. Smiley, W. G. Analytical method for carbon in uranium, 4765.

Smiljanié, G., and Rabuzin, T. Automatic scanner for electrophoresis and chromatography paper strips, 301.

Smillie, R. M. Separation of ribonucleic acid nucleotides on ion-exchange paper, 3922.

Smirnov, B. P., Popova, R. A., and Niskanen, R. A. Quantitative paper chromatography of higher fatty acids in the form of methyl esters (R·COO·14CH₃), 5036.

Smirnov, N. S. See Fomina, O. A., 1316.

Smirnova, G. K. See Lipshits, B. M., 4707. Smirnova, K. A. See Brudz', V. G., 3169, and

Lukin, A. M., 4710.
Smirnova, N. M. See Ivanova, E. A., 530.
Smirnova, V. I. See Levitin, R. E., 1360.
Smirnov-Averin, A. P. See Krot, N. N., 983.
Smit, G. B. See Nooyer, J. A. de, 284.

Smit, J. See Irving, H., 2031.

Smit, W. B. de V. See Marais, P. G., 5520.

Smit, W. M. Amperometric titrations, 4619.

Ruyter, J. H., and Wijk, H. F. van. Cryoscopic method for the micro-determination of molecular weights 3611.

Smith. A. I. Chromatographic analysis of mixtures of adipic, glutaric and succinic acids, 2282.

Smith, A. L. Infra-red spectra - structure correlations for organosilicon compounds, 4346.

and McHard, J. A. Spectroscopic techniques for dentification of organosilicon compounds, identification 1075.

Smith, A. M., and Eddy, C. R. High-resolution infra-red spectra of steroids in the carbonhydrogen stretching region, 1876.

Smith, A. N. Photometric determination of ferric iron by catechol, 1351.

Smith, B. Analysis of aromatic solvents by gas

chromatography, 1801.
- and Ohlson, R. Gas-chromatographic separation of 3- and 4-methylpent-1-ene, 1780.

Smith, B. O., and Stevens, J. W. chemical balance, 794. Ouick-acting

Smith, C. D. See Jakobsen, R. J., 1802, 1803. Smith, C. F. Comparator for X-ray spectrum films, 2569.

Smith, C. L. See Campbell, C., 1220.

Smith, D. L., Wilson, H. R., and Goward, G. W. Determination of uranium as an impurity in zirconium and Zircalov, 2147.

Smith, D. M., Bartlet, J. C., and Levi, L. Sucrose acetate isobutyrate as a new ester liquid phase for gas - liquid partition chromatography, 5091.

— See also Bowersox, D. F., 3649. Smith, D. W. See MacLennan, A. P., 3412. Smith, E. R. B. See Leifheit, H. C., 643.

Smith, F. M. Internal standard method of general

spectrographic analysis, 1209.

Smith, G. F., and Diehl, H. Wet oxidation of bone. Digestion with 100% sulphuric acid followed by the addition of dioxonium perchlorate [73.6% perchloric acid], 1841. Anhydrous magnesium perchlorate desiccant with added indicator, 2592. Low-temperature wet-oxidation of organic compositions. Perchloric and periodic acids as oxidants. "The periodic acid liquid fire reaction" 5139.

and **Schilt**, A. A. [Fifteenth International Congress of Pure and Applied Chemistry. Fifteenth International 1956.] Lisbon. 4-Phenyl-2: 6-bis-(4-phenyl-2-pyridyl)- and 4-phenyl-2:6-bis-(6-phenyl-2pyridyl)-pyridine: their spectrophotometric constants in reactions of chelation with FeII, CuI and Coll, 2031.

See also Collins, P. F., 2730, and Diehl, H.,

1396, 2045, 3102.

Smith. G. N. Colorimetric determination of 3:5dinitro-o-toluamide and related dinitro compounds, 3823.

Smith, G. W., and Palmby, A. K. Flame-photo-metric determination of lead and manganese in gasoline, 2823.

— See also **Griffing, M. E., 4866**. **Smith, Hamilton.** Estimation of arsenic in biological tissue by activation analysis, 1473.

Smith, H. A. See Fagel, J. E., 15.
Smith, Hilton A. See Bennett, R. L., 1313.
Smith, H. J. Detection and estimation of the biologically active constituents of pyrethrum,

5054 Smith, I. M. See Ressler, N., 2401. Smith, J. D. See Guillemin, R., 692. Smith, J. N. See Gessner, T., 5301.

Smith, J. W. See Greenhow, E. J., 1053.

Smith, L. L., Foell, T., De Maio, R., and Halwer, M. 16a-Hydroxysteroids. II. Partition chromatography of triamcinolone and related steroids, 2908.

- and Halwer, M. 16x-Hydroxysteroids. Characterisation of triamcinolone, 1169.

Smith, L. M., and Freeman, N. K. Analysis of milk phospholipids by chromatography and infra-red spectrophotometry, 2455.

and Jack, E. L. Isolation of milk phospholipids

and determination of their polyunsaturated fatty

acids, 736.

Smith, M. E. See Bergstresser, K. S., 2155. Smith, M. J. Analysis of phosphate mixtures by paper chromatography, 86.

Smith, M. L. See Kolling, O. W., 2598.

Smith, R. L. See Rolling, U. W., 2598.

Smith, R. See Leahy, T., 4965.

Smith, R. J. D. See Angell, C. L., 3818.

Smith, R. N. See Kennedy, W. R., 3563.

Smith, R. V. See Banks, C. V., 2742.

Smith, S. B. See Meagher, W. R., 1974.

Smith, S. W. See Taylor, J. K., 2583.

Smith, T. D. Colorimetric determination of dialkylabershites where see each the line 44924 bigs. 44924.

phosphites using cacotheline, 4834.

See also Foreman, J. K., 2031.

Smith, T. E. See Mitoma, C., 3431, and Wiessbach, H., 5390. Analysis of synthetic detergents,

Smith, W. B. 1446.

Smith, W. T., jun., Wagner, W. F., and Patterson, J. M. [Review of fundamental developments in analysis.] Volumetric and gravimetric analytical methods for organic compounds, 5125. Smits, P. Micro-determination of the iodine value,

Smrhová, A., and Janáček, J. Determination of oxygen from the content of non-metallic inclusions in rimming steel, 1368.

Smuts, J. See Herbstein, F. H., 3744. Smutz, M. See Bethea, R. M., 1201.

Smyshlaev, S. I. Field method for the determination of titanium in rocks and ores, 1318.

Smyth, R. B. See Przybylski, W., 5436. Smyth, R. D. See Barker, H. A., 3941. Snell, N. S., and Lewis, J. C. Errors caused by stainless-steel cylinders in plate bioassays, 3472.

Snowacka, A. Determination of epoxy-group content in epoxy resins by infra-red spectrophotometry, 4391.

Snyder, F., and Stephens, N. Spectrophotometric determination of ester groups in lipids, 219.

Snyder, J. W. See Carlson, S. R., 251. Snyder, L. J. See Henderson, S. R., 3569. Sobel, C., Henry, R. J., Gorlub, O. J., and Rudy, M. Chemical determination of aldosterone in urine,

Sobeslavský, C. See Michalec, C., 4006. Sobkowska, A. See Czarnecka, W., 73. Sobolewski, G., and Nadeau, G. Identification in urine of commonly used sedatives, hypnotics and tranquillisers, 4911.

- See also Nadeau, G., 2436.

Sobotka, H. See Baker, H., 1125, 3885.

Sobotka, M., and Trutnovsky, H. Micro-determination of carbonyl groups using sodium borohydride. (Preliminary communication), 561. Sobue, H., Hatano, A., and Arai, T. Determination

of methoxyl groups, 562.

Society for Analytical Chemistry. Determination of tocopherols in oils, foods and feeding-stuffs, 767. Application of gas-liquid chromatography to essential-oil analysis. Interim report on the determination of citronellol in admixture with geraniol, 3370. Fiore method for determining linalol: amendment, 4873.

Society for Analytical Chemistry, See Pharmaceutical Society of Great Britain, 2432.

Sodd, V. J., Goldin, A. S., and Velten, R. J. Deter-

mination of radioactivity in saline waters, 4028. Sode-Mogensen, M. T., and Lahav, E. Examination of casein preparations by paper electrophoresis, 4476

Soeda, Y. See Sudo, T., 169. Soep, H., and Demoen, P. Volumetric microdetermination of organic sulphur following the Schöniger combustion, 4810.

Sokoloski, T. D. See Higuchi, T., 2927. Sokolova, E. V. See Gusev, S. I., 5213. Sokolova, N. V., Orestova, V. A., and Nikolaeva, N. A. Rapid micro-determination of halogens in organic compounds, 2255.
Sokolova, R. S., and Krýlova, T. N. Interference

filters for the ultra-violet region of the spectrum,

Sokolski, W. T., Eilers, N. J., and Eble, T. E. Psicofuranine. V. Paper chromatography and ultra-violet absorption assay, 1896.

— See also Hanka, L. J., 1896.
Soleil, J. See Laurent, F., 5405.
Soliman, A. See Khalifa, H., 2167, 3172.
Solli, O. See Salvesen, B., 1902.

Solodovnik, S. M., and Kondrashina, A. I. Spectro-graphic determination of small amounts of hafnium dioxide in zirconium dioxide, 444.

— See also Notkina, M. A., 2062. Solomon, E. See Kang, C.-C. C., 4370. Solomon, L. E. See Brookes, H. E., 2955.
Solotina, N. I. See Bashilova, N. I., 2649.
Solymosi, F., and Csik, J. Osmium tetroxide as

general catalyst for oxidations in alkaline media.

and Varga, A. Analytical applications of oxidations with ferricyanide catalysed by osmium tetroxide. III. Simultaneous determination of sulphur compounds, 2189.

See also Csányi, L. J., 419.

Someren, E. H. S. van. Development of metallurgical spectroscopy, 3597.

Someren, G. R. van. See Jong, H. G. Bungenberg

de, 217. Somfalvy, E., and Ausch, K. S. Paper-chromato-graphic front indicators, 808.

Sommariva, A. See Devoti, A., 2233.

Sommer, D. See Bausch, H., 3999.
Sommer, L. Detection of titanium as the tetraphenylarsonium salt of polyhydric phenol chelates, 2124. Reactions of titanium^{IV} in anhydrous media, 3187.

See also Okáč, A., 2031.

Somogyi, M. Assay of amylase, 3929. Sondericker, J. H., jun. See Goland, A. N., 332.

Songina, O. A. See Savitskaya, I. S., 5518.
Sonnenschein, W. Determination of very small amounts of silicon in water by extraction of an amine salt of silicomolybdenum blue with chloroform, and photometry of the chloroform

solution, 776.

Sophoulis, E. Qualitative analysis of some sulphonamides by paper chromatography, 2944.

Sorby, D. L., and Plein, E. M. Determination of mercury in biological materials, 4902.

Serensen, J. H. Stability and determination of Amphisol [amiphenazole] in aqueous solution,

Sorof, S., Young, E. M., Spence, M. M., and Fetterman, P. L. Protein resolution of concentrated tissue extract in zonal column electrophoresis, Sosinskil, M. L. Low-pressure mercury arc for the investigation of light scattering, 1620.

Soska, J. See Stelka, K., 1606. Sosnovskaya, L. I. See Rusanov, A. K., 3567. Sosnovskaya, T. I. See Yudelevich, I. G., 2057. Sossi, V. Differentiation of olive oils classified as

"rectified B," 1939.

Sotnikov, V. S., and Alimarin, I. P. Gravimetric and titrimetric determination of bismuth with the ammonium salts of benzene- and naphthaleneselenic acids, 3206. Ammonium benzene- and naphthalene-seleninates as reagents for the quantitative determination of titanium, 4197.

Souchay, M. P. Polarographic analysis in organic

chemistry, 3280.

Souder, J. C., and Deluca, P. Infra-red assay of chloroform in pharmaceutical products, 5423.

Sousa, A. de. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Indirect determination of uranium by a complexometric method, 2031. Determination of chlorate and perchlorate in presence of each other, 4772.

Souter, F. See Tombs, M. P., 2396.
Southworth, B. C. See Tuckerman, M. M., 3294.
Sovereign, W. R., See Larsen, R. P., 3103.
Sovová, A. See Stefi, M., 4423.
Spaander, P., and Elskamp, H. J. Gas-burner with

coupled gas and air supply, 1218.

Spaccamela-Marchetti, E. See Rigamonti, R., 2226 Spacu, P., and Antonescu, E. Determination of Phenergan [promethazine], 1551. Determination of Flaxedil [gallamine triethiodide], 2949.

Antonescu, E., and Albescu, I. Determination of chromium in aqueous solutions used in the

tanning industry, 5334.

Antonescu, E., and Gheorghiu, C. Determination of Largactil [chlorpromazine], 4460. Determination of hexathiocyanatochromium¹¹¹ ions, 5226. and Calugareanu, S. Determination of bismuth,

93. - and Ianu, C. Colorimetric determination of quinine, cinchonine, brucine and strychnine,

5404

Ovanesian, A., and Gavanescu, D. Use of chloramine T in analytical chemistry. II. Determination of iron, aluminium, vanadium and titanium, 1256.

and Popea, F. Gravimetric determination of zirconium, 438. Gravimetric method for the

Spagliardi, G. P. See Foglino, M. L., 2234. Spagnolo, F. Determination of rosin in protective

coating vehicles. I; II, 3383.

paulding, G. H. Determination of glycine in glycine - potassium trioxalatochromate^{III}, 588. Spaulding, G. H.

Speak, H., and Jackwerth, E. Analysis of extracted inorganic compounds. Job method of continuous variation and conductimetric titration, 350.

 See also Jackwerth, E., 404, 1251, 3311.
 Speecke, A., and Hoste, J. Separation of niobium from tantalum in hydrochloric acid - oxalic acid medium by anion exchange, 2176.

Spell, H. L. Infra-red analysis of a mixture of 1:4dihydroxy C₄'s, 1785. Spence, M. M. See Sorof, S., 4957.

pencer, B. Studies on sulphatases. XXV. Determination of BaS¹⁸O₃¹⁸O by infra-red spectro-Spencer, B. scopy, 3458. Ultra-micro determination of inorganic sulphate, 3872.

Spencer, C. C. Determination of optical rotation of some monosaccharides, 3803.

Speroni, G. See Califano, S., 190. Spetsig, L.-O. See Brohult, S., 4001. Spicer, G. S. See Bryant, F. J., 637, 2031, 3102. Spielberg, N. See Ladell, J., 4085.

Spinková. V. Tuberculostatics with reference to the evaluation of some combined pharmaceutical

preparations, 2942.

and Zýka, J. Analytical study of NN'-bis-(N-methylquinolinylurea) methylsulphate [quinuronium sulphate] (Acaprin Bayer). I. Gravimetric and volumetric determination, 2953. II. Photometric and spectral determination, 4463.

Spinner, I. H., and Miller, F. C. Application of the 1-(2-pyridylazo)-2-naphthol method of uranium

analysis to thorium process solutions, 114.

Spivakovskaya, N. E. See Vdovenko, M. E., 143.

Spoerri, P. E. See Fishman-Goldenberg, V., 2283.

Spolter, L., and Marx, W. Paper chromatography of heparin and related sulphated mucopolysaccharides, 4930.

Spong, A. H. See Plessis, L. A. du, 2685.
Spoor, H., and Zahn, H. Oligomers. XVII.
Quantitative paper-chromatographic determina-

tion of secondary amines and amides, 1099.

Spotswood, T. M. Chromatography of polycyclic aromatic hydrocarbons on acetylated paper. I,

Spracklen, S. B. See Union Carbide & Carbon

Corp., 4596.
Sprince, H. Modified Ehrlich benzaldehyde reagent for the detection of indoles on paper chromatograms, 3830.

Spryskov, A. A. Sulphonation reaction. XLIX. Determination of isomeric toluenesulphonic acids in their mixtures, 1812.

and Potanova, T. I. Study of the sulphonation reaction. I. Determination of toluenedisulreaction. phonic acid isomers, 3345.

Spurný, Z. Spectrophotometric method for the determination of chlorine, 770.

Squirrell, D. C. M. See Haslam, J., 4024, 4383.

Staier. V. Direct determination of uranyl nitrate in tributyl phosphate, 3729.

Srinivasan, K. S. See Krishnamurthy, K., 2508. Srivastava, M. N. Separations involving sulphides. III. Separation of molybdenum and tellurium from barium, 900; IV. Separation of arsenic, antimony, tellurium and mercury from zirconium, 900.

Srivastava, S. K. See Kannan, L. V., 247.
Srivastava, T. N., Agarwal, S. P., and Aggarwal, R. C. Use of o-cresotic acid as a reagent for the estimation of thorium and zirconium, 2151.

 See also Agarwal, S. P., 2682.
 Srivastava, T. S. See Pande, C. S., 446, 4268, 4653.
 Stabryn, J. Polarographic determination of antimony and copper in titanium dioxide in the analysis of rutile, anatase and brookite, 1321.

Stacchini, A. See Intonti, R., 745, 1925, 5437.
Stacey, M. See Barker, S. A., 1849.
Stadler, F. See Prey, V., 2447.

Stadler, V. See Fiala, A., 538, 4594.
Stafford, C., jun., and Toren, P. E. Analysis of acrylonitrile [vinyl cyanide] - methylvinylpyridine copolymers, 2341.

Staiger, U. See Lippert, E., 3069.

Stalder, K. Determination of some short-chain dicarboxylic acids in urine by paper chromato-

graphy, 650. Staley, H. G., and Svec, H. J. Determination of nitrogen in metals by isotope dilution, 2157.

Stambaugh, R. See Schwarz, H. P., 5364.
Stambaugh, R. L., and Wilson, D. Wright. Chromatography of nucleotides, nucleosides, and pyrimidines and purines on activated charcoal,

Stamenova, N., and Abrasheva, P. Colorimetric method for the determination of luminal [phenobarbitone] in small amounts of drug mixtures,

Stamires, D. See Szymanski, H., 3036. Standard Oil Co. Stationary liquid phase for gas chromatography, 5495.

Stanercu, G. See Lupu, C., 5479.
Stanerich, S. V. See Sall', A. O., 5506.
Stanford, F. G. Sample-injection method for gasliquid chromatography, 303.

Stankoviansky, S., Podaný, V., Jassinger, F., and Majer, P. 2-NN-Di(carboxymethyl)aminomethylquinizarin as a new metallochromic indicator for calcium, 4675.

Stanley, E. L. See Rosenthal, I., 1594. Stanley, T. W. See Sawicki, E., 1085, 2301, 2797, 3343, 4354.

Stanley, W. L. Determination of menthyl salicylates in lemon oil, 1824.

Staples, D. A. See Long, C., 3445. Staples, R. C. See Prill, E. A., 4478. Stapor, W. See Michalski, E., 58.

Starka, L., and Buben, I. Polarographic estimation of Amphenone B [3:3-di-(p-aminophenyl)butan-2-one] and Su 4885 [2-nicotinoyl-2-(3-pyridyl)propane], 5009.

and Prusiková, M. Paper chromatography of steroids in systems with ethanediol as the

stationary phase, 686. Starke, K. See Casey, A. T., 17.

Starkey, R. J. Spectrophotometric determination of acetylacetone with cupric acetate, 1414. Starostina, L. S. See Ruchik, A. S., 397.

Stary, J. Extraction of metals in the form of complexes by organic reagents, 345. Extraction of lanthanum complexes with benzoylacetone, 3676

Stashkova, N. V., and Zelyanskaya, A. I. Polarographic determination of germanium, 3683.

Staten, F. W., and Huffman, E. W. D. Colorimetric method for determination of vanadium employing 1-(2-pyridylazo)-2-naphthol, 3208.

Staudinger, H. See Raptopoulo, R., 1152. Steciak, T. See Czakow, J., 910. Stedham, M. E. C. Automatic moisture indicator

for clay, 1980.

Steed, K. C. See Herrington, J., 4178.

Steele, T. W. Volumetric determination of uranium after reduction by lead in dilute perchloric acid solution, 3724. Separating apparatus for solvent extractions with solvents lighter than water, 4554.

Steelink, C. Colour reactions of certain phenols with Ehrlich's reagent, 1430.

Steers, E. B. See Bovey, L., 314, 988, 2212.

Stefan, V. Polarographic determination of thiosulphate in photographic gelatin, 4868.

Stefanescu, P., and Stefanescu, Y. Gravimetric method for the determination of lead, 1697.

Ștefănescu, Y. See Ștefănescu, P., 1697.

Stefka, K., and Soska, J. Monochromatic ultra-violet light source for the evaluation of chromatograms, 1606.

Steff, M., Tulach, J., and Sovová, A. Coloration of with unreduced ninhydrin on amino acids chromatographic paper, 4423.

Stegemann, H., and Griffin, H. F. Diazo reaction following chloramine-T oxidation as a sensitive and specific test for aspartic acid, 4428.

Stegendo, Z. K. See Shcherbakov, V. G., 4201. Steger, E. Zeiss infra-red spectrophotometer, 5110.

Stehr, E. Carbon and hydrogen micro-determination by automatic combustion control, 1047.

Steigman, J. See Felten, E. J., 3068. Steimetz, E. P. "Bio-électronique" for chemical analysis, 2039.

Stein, D. B., jun. See Courchaine, A. J., 4973. Stein, M. L. See Cacace, F., 2465.

Steinbach, J. F. See Brown, W. B., 2737.
Steinbach, K. J. See Taufel, K., 3887.
Steinberg, D. Radio-assay of aqueous solutions mixed with solid crystalline fluors, 847.

Steinberg, H. See Hunter, D. L., 3661.

Steinberg, M. See Glasner, A., 919, 2656.
Steingiser, S., Darr, W. C., and Hardy, E. E.
Isomer ratio analyser for toluenedissocyanate [dicyanatotoluene] based on dielectric-constant measurements, 1079.

See also Baumann, G. F., 624.

Steinmetzer, W. See Böttger, S., 1560, 1561.
Steizner, R. W. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part 2. Instrumentation, remote-control technology. niques and nucleonics. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Instrumentation for chemical analyses. C. Applications of radio-frequency to reactor analysis, 3103.

— See also Feldman, C., 3103.

Stembridge, V. A. See Dominguez, A. M., 5341.

Stengel, E., and Riemer, G. Photometric determination of the end-point in the complexometric titration of calcium and magnesium, 35.

titration of calcium and magnesium, 35.

Stenhagen, E. See Brohult, S., 4001, Hallgren, B.,
755, and Ryhage, R., 1422, 4336, 5283.

Stepanenko, E. M. See Peregud, E. A., 4228.

Stepanov, A. V. See Shvedov, V. P., 4115.

Stepanov, P. A. See Sergeev, E. A., 1293, 3274.

Stephen, M. J. See James, G. S., 3715.

Stephen, W. I. [International Symposium on Microchemistry. Birmingham, 1958.] Organic functional group analysis, the alleys of deter-

functional group analysis-the alkoxyl determination, 3102.

See also Belcher, R., 123, 2600, 4633, and Rees, D. I., 2037.

Stephens, N. See Snyder, F., 219. Stephenson, J. L. See Eden, M., 818. Stephenson, N. R. Sloping screen method for the

bioassay of insulin in mice, 3478.

Stephenson, W. H. See Hobson, F., 1279.
 Stepién, A. See Marczenko, Z., 5142.
 Stepin, V. V., Pliss, A. M., and Silaeva, E. V. Determination of impurities in metallic vanadium. I,

Sterescu, M., Keim, N., and Aftalion, H. Deter-

mination of benactyzine, 2437.

- and **Pelloni, V.** Paper-electrophoretic determination of hydroxymethylanthraquinones in frangula extracts in the presence of phenolphthalein, 4999.

Sterligov, O. D. See Zhukhovitskii, A. A., 3354. Sterling, G. B., Cobler, J. G., Erley, D. S., and Blanchard, F. A. Terpolymer rubbers. Standardisation of infra-red analysis by chemical and radio-tracer methods, 2352.

Sternberg, J. C., Stillo, H. S., and Schwendeman, R. H. Spectrophotometric analysis of multicomponent systems using the least-squares method in matrix form. The ergosterol irradiation system, 3928.

Sternman, I. See Geld, I., 2220.

Stevens, A., and Sakami, W. Biosynthesis of methionine in liver. [Determination of [14C]- or [18S]-methionine in the presence of labelled 1:3-thiazan-4-carboxylic acid (tetrahydro-1:3thiazine-4-carboxylic acid)], 1867.

Stevens, H. M. Separation of hyponitrite from nitrite, nitrate and hydroxylamine by paper chromatography, 3199.

Stevens, J. W. See Smith, B. O., 794. Stevens, S. G. E. See Cross, A. H. J., 3463. Stevenson, G. W., and Biers, S. H. Micro-method

for differentiation of primary and secondary from

tertiary amines by cyanoethylation, 3320.

Stevenson, M. D. See Glastonbury, H. A., 1978.

Stewart, F. N., Caldwell, J. E., and Uelner, A. F. Determination of isomeric distribution in mixed toluene-o- and -p-sulphonamides by ultra-violet absorption, 2804.

Stewart, G. H., Seager, S. L., and Giddings, J. C. Influence of pressure gradients on resolution in

gas chromatography, 2538.

See also Giddings, J. C., 5077.

Stewart, J. E. Sampling technique for infra-red

spectroscopy of solids, 1213.

Stewart, R. D., Erley, D. S., Skelly, N. E., and Wright, N. Infra-red analysis of blood serum, red blood cells and other body fluids, 3858.

Erley, D. S., Torkelson, T. R., and Hake, C. L. Post-exposure analysis of organic compounds in the blood by a rapid infra-red technique, 1482.

Steyermark, A. [Progress in microchemistry.] Elementary quantitative organic analysis, 2033. [International Symposium on Microchemistry. Birmingham, 1958.] Standardisation of micro-chemical apparatus and methods in the U.S.A., 3102

- Bass, E. A., Johnston, C. C., and Dell, J. C. Micro-determination of sulphur in organic compounds utilising the Schöniger combustion, 4809.

- Kaup, R. R., Petras, D. A., and Bass, E. A. Micro-determination of fluorine in organic compounds following a modified Schöniger combustion, 3288.

Steyn, W. J. A. See Davidson, R. J., 3010. Stich, K., Rotzler, G., and Reichstein, T. Charac-terisation of unsaturated steroids by their absorption spectra in the far ultra-violet, 688.

Stickel, R. M. See Gilbert, G., 3349.
Still, J. E. See Chirnside, R. C., 2031.
Stillo, H. S. See Sternberg, J. C., 3928.
Stimmel, C. H. See Young, J. G., 4469.

Stitch, S. R. Liqui [14C]-steroids, 2905. Liquid scintillation counting for

Stoch, J. See Gregorowicz, Z., 4771. Stock, A. L. See Van Gheluwe, J. E. A., 2987. Stock, J. T. [International Symposium on Microchemistry. Birmingham, 1958.] Solid-electrode voltammetry and amperometric titration, 3102. Amperometric titration with two indicator electrodes and allied techniques, 3584.

Stockdale, D. Formaldehyde method for determining ammonia, 2684

Stöcklin, G. See Herr, W., 2758.

Stoddard, R. L. See Bruno, M. M., 1088.

Stoicheva, L., and Abrasheva, P. Quantitative determination of parathion in commercial presentation in commercial presentation in commercial presentations in internal presentation in commercial presentations. parations and its detection in internal organs, 2505.

Stolyarov, K. N. See Efremov, G. V., 4691. Stolyarov, K. P., and Grigor'ev, N. N. Luminescence method of microchemical analysis (crystallo-phosphor method). II. Detection of tin, 2122. Microchemical method for the detection of some elements based on the formation of luminescent products, 3613.

Stolyarova, F. N. See Rozova, M. I., 1070. Stolz, J. See Krejčí, E., 665. Stone, J. C. See Lacoste, R. J., 1096. Stone, K. G. See Al-Qaraghuli, N., 1636.

Stone, L. R., Lewis, P. A., Miller, M. T., and Berg, C. F. Determination of low levels of furazolidone in feeds, 1967.

Stone, W. B. See Holness, H., 617. Stonhill, L. G. Apparatus for thermogravimetry in hazardous atmospheres, 5513.

Storck, J. See Castel, P., 709.

Storherr, R. W., and Mills, P. A. Extraction of milk for DDT determination. One-day complete method, 4474.

Storms, L. E. Determination of uranium and molybdenum by selective precipitation with

8-hydroxyquinoline, 2211.

Stoss, D. R. Calculating board for spectrochemical analysis, 4580.

Stotz, E. See Marinetti, G. V., 4936.

Strache, F. Fluorimetric determination of quinine in tonic water, 1926.

Štráfelda, F., and Říhová, J. Complexometric determination of calcium and magnesium with potentiometric end-point detection, 5159.

See also Polej, B., 2582.

Strahm, R. D., and Hawthorne, M. F. Determination of boron in borohydrides and organoboron compounds by exidation with trifluoroperoxy-acetic acid, 4688.

Strain, H. H. [Review of fundamental developments in analysis.] Chromatography, 5125.

Strange, B. See Anderson, C. J., 4408. Stranský, Z. See Machů, J., 5121.

Strasheim, A., Eve, D. J., and Fourie, R. M. Spectrographic method for the analysis of plant material using sodium tetramethylenedithio-carbamate for the concentration of the trace elements, 3011.

Strashok, A. F. See Voitsekhovskii, A. E., 876. Strassburger, J., Brauer, G. M., Tryon, M., and Forziati, A. F. Analysis of methyl methacrylate copolymers by gas chromatography, 4886.

Straub, C. P. See Goldin, A. S., 3103.
Straub, W. A. See Lewis, L. L., 3762.
Straus, R., and Wurm, M. Determination of serum lipoproteins separated by paper electrophoresis,

Strauss, H. D., and Richards, H. K. Determination of liquid-bound radio-iodine in blood, 3398.

Strauss, P. A. See Alpert, N. L., 3072. Streipa, I. Potentiometric determination of iodine

and bromine, 994.

Strel'nikova, N. P., and Lystsova, G. G. Separation of tellurium from platinum and non-ferrous metals by means of a cationite, 4240.

and Pavlova, V. N. Determination of aluminium

in tellurium by means of an anionite, 5225.

Strelow, F. W. E. Separation of thorium from rareearth-elements, zirconium and other elements by cation-exchange chromatography, 943. Separation of zirconium from titanium, ferric iron, aluminium and other cations by cation-exchange chromatography, 3192. Separation of cadmium from uranium, cobalt, nickel, manganese, zinc, copper, titanium and other elements by cation-

exchange chromatography, 4683.

Strem, M. See Arnett, E. M., 4656.

Strength, D. R. See Jellinek, M., 664.

Streuli, C. A. Titration characteristics of organic bases in nitromethane, 2288. Relative acidities of substituted phenols in pyridine and water, 4844.

Stricker, F. See Kock, W., 137, 3060. Strickland, R. D., Mack, P. A., and Childs, W. A. Determination of cystine by its catalytic effect on the iodine - azide reaction, 4953.

Strickland, R. D., Mack, P. A., Gurule, F. T., Podleski, T. R., Salome, O., and Childs, W. A. Determining serum proteins gravimetrically after

agar electrophoresis, 1511.

Mack, P. A., Podleski, T. R., and Childs, W. A. Ultra-violet spectrophotometry of serum proteins,

Podleski, T. R., Gurule, F. T., Freeman, M. T., and Childs, W. A. Dye-binding capacities of eleven electrophoretically separated serum proteins, 1513.

Strickler, H. S. See Saier, E. L., 2909.

Strigini, P. See Bottini, E., 1855.
Strocchi, P. M., and Rebora, P. Spectrometric determination of traces of titanium with a new specific reagent, 2125.

Strohl, G. See Hartmann, Helmut, 97. Stromatt, R. W. Determination of neptunium by controlled-potential coulometry, 985. Determination of the valency states of neptunium ions in solution by controlled-potential coulometry, 3734.

Stromberg, A. G., and Gorodovýkh, V. E. Polarographic determination of 10⁻⁷M lead, 3690.

See also Zakharov, M. S., 4263.

Strong, F. M. See Sievert, H. W., 4440. Stronski, I. Anion-exchange method for the separation of indium, tin, antimony and tellurium with radioactive indicators, 5141.

and Rybakow, W. N. Anion exchange of radio-isotopes of indium, tin and antimony and the preparation of carrier-free indium-113m and antimony-125, 4173.

Stross, F. H. See Badley, J. H., 2033, Fredericks, E. M., 3049, and Johnson, H. W., jun., 1202. Strubl, R. Electronic thermobalance and its application in the iron and steel works laboratory,

Strunz, W. Contributions to the detection and quantitative determination of 2:3-dimethyl-1phenyl-4-pyrrolidino-5-pyrazolone in serum and medicinal solutions, 3405. Struszynski, M., and Chwastowska, J. Determina-

tion of platinum in the cathode slime during the

production of hydrogen peroxide, 549.

Strutz, H. C. See Radell, E. A., 2859.

Strzyga, K. See Blitek, D., 3003.

Strzyżewska, B. Spectrographic determination of uranium in ores by the powder-sifting method,

- See also Czakow, J., 4248, and Radwan, Z., 484.

Stuart, L. S. See Ortenzio, L. F., 1976. Stuck, W. Micro-determination of carbon in organic substances, 4305. Stucklik, J. See Dudek, V., 3334.

Studenskaya, L. S. See Chirkov, S. K., 2235.

Studiar, K. See Janoušek, I., 532, 3151. Studnitz, W. von, and Hanson, A. Determination of 4-hydroxy-3-methoxymandelic acid in urine by high-voltage paper electrophoresis, 652.

Stukenbroeker, G. L. See Atwell, M. G., 335, Barker, E. R., 335, and Beyer, W. W., 3103. Sturm, F. von. Limits of application of the polaro-

graphic method in inorganic analysis, 4107.

Su, F.-C. See Yu, C.-C., 4347. Subbotin, V. I. See Kirillov, P. L., 4121. Subrahmanyam, P. V. R., Sastry, C. A., and Pillai, C. S. Determination of the permanganate value for waters and sewage effluents containing nitrite. 3532

Subrahmanyan, V. See Venkat Rao, S., 1172, 2975,

Sudendey, F. See Frey, H.-H., 1545.

Sudô, E. See Gotô, Hidehiro, 2632, 3669. Sudo, T., Shimoe, D., Tsuji, T., and Soeds, Y. Micro-determination of sulphur in organic compounds by absorption with silver, 169.

Süe, P. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Microdeterminations by deuteron activation, 2031.

Sugir, E. See Szekeres, L., 3718. Sugi, A. See Momose, T., 2031. Sugimoto, K. See Musha, S., 853. Suhr, N. H. See O'Neil, R. L., 3365.

Suk, V., and Miketuková, V. Chemical indicators. V. The chelatometric indicator Eriochrome cyanine R, its acid - base properties and formation of metal complexes, 3116.

Sukhareva, Z. I. Dipotassium hydrogen phosphate

for the separation of serum proteins, 676.
Sukhareva, Z. S. See Gudovich, R. A., 675.
Sukhenko, K. A., Galonov, P. P., and Barasheva,
T. V. Determination of nitrogen in steels of various compositions, 3754.

Sula, J. See Pavlů, J., 4997.

Sulcek, Z., Michal, J., and Doležal, J. Analysis of metals and crude minerals. VIII. The determination of small amounts of uranium in crude minerals, 1342. Separation of minute amounts of beryllium on silica gel. (Preliminary communication), 3639.

See also Povondra, P., 1712, 1744.

Sullivan, J. H., Walsh, J. T., and Merritt, C., jun. Gas chromatography by temperature programming. Application to mercaptans [thiols] and sulphides, 2783.

Sullivan, L. J. See Kennedy, J. V., 3082.

Sullivan, M. X., and Mijal, C. F. Determination of

lanthionine, 1138.

Sulser, H. Measurement of radial paper chromatograms of unsaturated fatty acids with a microphotometer, 754. Preparation of comparison chromatograms in radial paper chromatography,

Fluorescence X-ray spectrometric estimation of aluminium, silicon and iron in the flotation products of clays and bauxites, 1386.

Sun, T.-G., and Tang, T.-H. Determination of sulphur in organic compounds by benzidine hydrochloride, 555.

Sun, Y.-P. See Earle, N. W., 1973.
Sundaram, T. K., Rajagopalan, K. V., and Sarma,
P. S. Paper electrophoresis of nicotinic acid

derivatives, 2316.

Sundberg, O. E., and Maresh, C. Micro-determination of carbon and hydrogen by gas chromatography, 4303.

Sunderman, D. N., and Meinke, W. W. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Separation of radioactive silver by isotopic exchange, 2031.

— See also Brown, C. T., 4674. Sunderman, F. W. See Sunderman, F. W., jun.,

677, 5343. Sunderman, F. W., jun., and Sunderman, F. W. Studies on the serum proteins. IV. The dyebinding of purified serum proteins separated by continuous-flow electrophoresis, 677. Studies in serum electrolytes. XXII. Method for serum potassium using tetraphenylboron, 5343.

Sundermann, H. See Koch, W., 529. Sundkvist, G. See Danielsson, A., 306. Surak, J. G., Fisher, D. J., Burros, C. L., and Bate, L. C. Apparatus for pyrohydrolytic determination of fluorides, 3737.

See also Moore, F. L., 1003.

Surasiti, C., and Sandell, E. B. Determination of sub-microgram quantities of ruthenium by catalysis of the cerium v-arsenic reaction, 4793

Surcar, A. K. See Chaterjee, P. K., 5333. Surový, J. Registration of gas-chromatography fractions by means of a mercury-drop potentiometer, 4566.

Suryanarayana, M., and Rao, G. G. Oxidimetric methods for the volumetric determination of molybdenum. II. Titration with potassium dichromate, with diphenylbenzidine and Nphenylanthranilic acid as indicators. A study in redox indicator mechanisms, 4757.

See also Rao, G. G., 968, 2196, 2197.
 Suschitzky, H. See Bark, L. S., 5206.

Susi, H. Infra-red spectra of crystalline adipic acid and deuterated analogues, 3808.

Suszka, A. See Kurzawa, Z., 5374. Suter, H., and Hadorn, H. Flame-photometric determination of sodium in dietetic products,

Sutton, D. See Welford, G. A., 1371. Sutton, N. V. See Bradley, A., 1643. Suurinkeroinen, M. See Hirsjärvi, V. P., 3236. Suvorova, O. A., and Karinskaya, F. G. Determination of rhenium in molybdenites and industrial

wastes, 1348.

Suvorovskaya, N. A. See Plaksin, I. N., 1073. Suwal, P. N., jun. See Fairbairn, J. W., 3949. Suzuki, F. See Itsuki, K., 379, 930, 1766. Suzuki, Keinosuke. See Yasuda, M., 2031. Suzuki, Kyohei. See Gotô, Hidehiro, 533. Suzuki, Masami. Determination of a micro amount

of impurities in metallic uranium. III. Photometric determination of traces of nickel, 3730; IV. Photometric determination of copper, 1739.

Suzuki, Michio. See Nagase, Y., 3508.

Suzuki. N. Determination of silver with radioactive silver dithizonate by the isotopic exchange method, 381. Chemical determination of trace elements in biological materials. XVII. Fundamental studies on the conditions for dry-ashing of plant material by the use of radioactive tracers, 633; XVIII. Isotopic dilution analysis of silver in plant material, 633. Study of the stability of dithizone and silver dithizonate in carbon tetrachloride by the use of radioactive silver-100, 1645. Solvent extraction by the use of radio-isotopes. I. Extraction of silver dithizonate with carbon tetrachloride and chloroform, 1672

and Kato, Toyoaki. Studies on solvent extraction by the use of radio-isotopes. V. Extraction of strontium-90 and yttrium-90 with 2-thenoyltrifluoroacetone in benzene, 4142.

- and Muroi, S. Solvent extraction by the use of radio-isotopes. II. Extraction of cobalt with radio-isotopes.

thiocyanate, 1762.

and Yoshida, Hiroyuki. Solvent extraction by the use of radio-isotopes. III. The extraction of the cobalt - nitrosonaphthol complex, 1762; IV. Extraction of cobalt 1-nitroso-2-naphthol with carbon tetrachloride, 1762.

Suzuki, S., Ohshima, T., Tamiya, N., Fukushima, K., Shimanouchi, T., and Mizushima, S.-I. Infra-red spectra of deuterated α-amino acids NH3+CDRCOO-. Assignment of the absorption

bands of a-alanine, 3904.

Svach, M. See Coufalik, F., 4290. Svec, H. J. See Staley, H. G., 2157. Svehla, G. See Erdey, L., 122.

Svendsen, A. B., and Backe-Hansen, K. Determination of morphine in opium, 2919.

Svendsen, R. Method by which radioactive material may be transferred from a paper chromatogram to a planchette, 2531.

Svensson, H., and Valmet, E. Large-scale density-gradient electrophoresis. II. Simple experimental technique securing perfectly stable zones and full utilisation of the separation capacity of a density-gradient column, 3055. Sventitskii, N. S. See Pedos, F. Z., 2546, and Prokof'ev, V. F., 3230. Sverak, J. Determination of small amounts of

carbon monoxide in hydrogen- and methanecontaining gases, 2115. Spectrophotometric determination of biuret in urea, 2296.

Sviridova, M. M. See Kuranov, A. A., 1274. Svobodo, G. R. See Shain, I., 3091. Svobodová, D. See Čelechovský, J., 1888. Swainbank, I. G. See Crouch, E. A. C., 3102. Swainbanh, M. See Venkat Rao, S., 1172, 2975,

Swann, M. H. Analysis of water emulsion paints, 5330

and Esposito, G. G. Analysis of water emulsion paints, 1465 See also Adams, M. L., 2856, and Esposito, G. G.,

3852. Swann, W. B., McNabb, W. M., and Hazel, J. F.

Amperometric titration of boron with fructose, 3655.

Sweeley, C. C. See Horning, E. C., 816. Sweet, T. R. See Salyer, D., 4790. Sweeting, J. W. Modification of "Agla" micrometer hypodermic syringe for use in vapour-phase chromatography, 2540.

Swenne, L. See Bystedt, J., 1174.

Swietosławska, J., and Held, S. "Single addition" method in spectral trace analysis. I. Application to quantitative analysis, 310; II. Application of linear extrapolation in semi-quantitative analysis,

 See also Ciecierska-Stoklosa, D., 4226.
 Swift, E. H. See Bowersox, D. F., 3649.
 Swinehart, B. A. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Application of the lead reductor to the determination of uranium, 335; Characterisation of uranic oxide by a reflectivity technique,

Syavisillo, S. V. See Bondarevskaya, E. A., 2262. Sybilska, D. See Kemula, W., 4048. Sykulska, Z. See Kalinowski, K., 762. Symons, M. C. R. See Griffiths, T. R., 1621.

Symons, N. K. J., and McKannan, E. C. Field method for determining moisture in nylon moulding-powder. Steam volumetric method, 3379

Sympson, R. F., and Caldwell, V. E. Polarographic determination of manganese, 4774.

Synek, L. See Večeřa, M., 2749, 3781, 4310. Szabadváry, F. Origin and development of the use

of acid - base indicators, 1646. Szabolcs, E., and Vastagh, G. Determination of

some derivatives of glutarimide, glutethimide, bemegride and Aturban (phenglutarimide), 1900. Szabolcs, I. See Berbalk, H., 5299, and Prey, V.,

2448, 3493. and Prey, V. Determination of Szaboles, O.,

betaine, 3497.

— See also Prey, V., 2448, 3493, 3498. Szalai, L., and Szöke, S. Quantitative evaluation of paper chromatograms by reflection measurements, 4053.

Szántó, F. See Buzágh, A., 3773. Szantó, J. See Mikes, J. A., 2703. Szarvas, P., and Gergely, A. Polarographic behaviour of quadrivalent titanium in ascorbic acid as basal electrolyte and its determination in the presence of much tervalent iron and other ions, 4198

and Jarabin, Z. Rutin as a reagent in inorganic analysis. II. Detection of vanadium with

rutin, 94.

Szaynok, A. See Trzebiatowski, W., 2683. Szczepaniak, W. See Lewandowski, A., 2716. Szekács, I. See Ladik, J., 1504. Szekeres, L. Determination of periodate, iodate,

bromate and chlorate ions in the presence of each other, 3739.

and Rady, M. Iodimetric assays. VII. The determination of iodine in the presence of arsenate,

and Sugár, E. Determination of sulphite and thiosulphate in the presence of each other, 3718. See also Bakács-Polgár, E., 89.

Szeredy, I. See Lörincz, F., 2966. Szewczuk, A. Colorimetric method for the determination of α-aminonitriles, 4338.

Szewczyk, J. See Durie, R. A., 3077. Szmrecsányi, I. V. See Gréger, K. M., 4386.

Szőke, K. Roe - Kuether method for the determination of ascorbic acid, 4015.

Szöke, S. See Szalai, L., 4053. Szopa, B. See Habermann, E., 3439. Szücs, J. See Csányi, L. J., 419. Szymanski, H., Povinelli, R., Stamires, D., and Lynch, G. Infra-red cell for collecting chromatographic fractions, 3036.

Szyszko, H. See Nowicka-Jankowska, T., 407.

T

Tabata, T. See Yamaguchi, K., 3467.
Taber, W. A. See Vining, L. C., 2925.
Tabor, C. D. See Kauffman, G. F., 3231.
Tabushi, M. Solvent extraction of metal acetyl-

acetonates, 2612. Solvent extraction of uranium, with chloroform, as acetylacetonate, 2712. Spectrophotometric determination of uranium, by solvent extraction, as acetylacetonate, 2713. Solvent extraction of iron as acetylacetonate with chloroform, 2723. Spectrophotometric determination of iron as acetylacetonate by solvent extraction, 2724.

— See also Ishibashi, Masayoshi, 4216, 4253, and Shigematsu, T., 388, 389, 1709, 1733.

Tachi, I. See Takemori, Y., 842.

Tachikawa, T. See Ueno, Kozo, 4219. Tadokoro, T. See Komatsu, S., 481.

Tagaki, W., and Mitsui, T. Analysis of isomeric menthols by gas chromatography, 4859.
 Taganov, K. I. See Prokot'ev, V. F., 3230.
 Taimni, I. K., and Ahuja, I. S. Systematic study of insoluble substances.
 IV. Scheme for the de-

tection of all types of insoluble substances, 1642.

- and I.al, M. Systematic scheme of qualitative analysis for anions. III, 1239; IV, 1641; V. Detection of common anions, 5127. Zinc acetate

as a reagent in gravimetric analysis. I, 4629.

and Tandon, S. N. Separations involving sul-X. Separation of zinc from some elements that form thio salts, 1679; XI. Separation of aluminium or uranium from some elements forming thio salts, 3668. Thermolysis of sulphides of arsenic, mercury, rhenium, antimony and molybdenum, 3717.

Takabayashi, Y. See Fukasawa, T., 1715.
Takacs, G. See Paulik, F., 2444.
Takada, M. See Komatsu, S., 4211.
Takagi, H. See Endo, Y., 3743.
Takagi, H. See Endo, Y., 3743.

Takagi, S. Micro-detection of ethanol, 1059. Takahashi, Akiko. See Tamamushi, R., 840.

Takahashi, Akira. Automatic continuous coulo-metric titration. I. Principle and construction of a titrator and its use for acid - base titration, 4618.

Takahashi, Masahito. Determination of reducing sugars by means of back-titration against alkaline

copper solution. I, 4471.

Takahashi, Masao. See Nakajima, Tokunosuke, 493. 1704.

akahashi, T., and Miyake, S. Separation of thorium^{IV} and cerium^{III} ions by using alginate Takahashi, Separation of as cation exchanger, 1703. Spectrophotometric determination of thorium with neothorone [arsenazo], 3697. Titrimetric determination of soluble silica as molybdosilicic acid, 4705. Characteristics of alginic acid as a cation exchanger and its application to the separation of thorium IV and ceriumIII ions, 4727.

Takamura, T. See Kubota, T., 3849.
Takashima, Y. Determination of metal ions with hexa-amminocobaltic chloride and ammonium V. Gravimetric determination of fluoride. aluminium, 2090; VI. Determination of gallium, 2090; VII. Radiometric determination of aluminium and gallium, 2090. Separation and

determination of gallium, indium and thallium with hexa-amminocobaltic chloride, 2099. Takayama, Y., and Kadota, S. Determination of vinyl cyanide in vinyl cyanide - vinylpyridine copolymer with concentrated phosphoric acid,

Takeda, H. See Emi, K., 2219.

Takei, S., and Kato, Takio. Syntheses of derivatives of dithizone and their application to analytical chemistry. IV. Suitability of di-1-naphthylthiocarbazone for the determination of mercury and copper, 4151.

Takemori, Y., Kambara, T., and Tachi, I. Chronopotentiometry. Simultaneous analysis of multiple

constituents, 842.

Taketatsu, T. See Misumi, S., 1278, 1691, 4181.

Takeuchi, F. See Shibata, Shozo, 1692. Takeuchi, K. See Sato, Kiyoshi, 394. Takeuchi, T. See Furusawa, M., 2818. Taki, K. See Komatsu, S., 1027, 4211. Takitani, S. See Ishidate, M., 3413.

Takiura, K., and Koizumi, K. Determination of glycols by polarography. [I], 1061; II. Deter-mination of blood sugar, 3407.

Takki-Luukkainen, I.-T. See Miettinen, T., 655.

Talalay, P. See Levy, H. R., 1883.
Talarico, M. See Mari, A., 1986.
Talati, A. M. See Dave, J. S., 1028, 1376, 3268, 3630, 3633, 3771.

Tamagishi, M., and Nakamura, I. Determination of sapogenins in the Dioscoreae. I. Colorimetric determination of diosgenin and tokorogenin, 685.

Tamamushi, R., Yamamoto, S., Takahashi, Akiko, and Tanaka, N. Effect of gelatin and poly-oxyethylene lauryl ether on polarographic diffusion currents of inorganic ions, 840.

— See also Tanaka, N., 1221.

Tamari, M. See Harel, S., 922.

Tamiya, N. See Suzuki, S., 3904.

Tamsma, A., and Powell, R. D. Butter-fat oxidation. Evaluation of Lea's aldehyde determination method, 2454.

Tanaka, M. Studies on controlled-potential electrolysis. VIII. Electrolytic analysis of metals with EDTA as supporting electrolyte, 3616; IX. Analysis of copper alloys, 3616.

Tanaka, N., Tamamushi, R., and Kodama, M. The rapidly dropping mercury electrode in direct-current and alternating-current polaro-

graphy, 1221. See also Tamamushi, R., 840.

Tanaka, R. See Hashimoto, S., 4161. Tanaka, T. See Iritani, N., 102.

Tanaka, T. See Iritani, N., 102.
Tananaev, I. V., and Glushkova, M. A. Extraction of small quantities of thallium from solutions of non-ferrous metals, 2648.

- and Shapiro, L. M. Turbidimetric titration of cobalt ion with dithio-oxamide, 3265.

and Vinogradova, A. D. Determination of aluminium in solutions containing fluoride ion by means of 8-hydroxyquinoline, 2092.

Tananaev, N. A., and Tikhonov, V. N. Determination of aluminium in magnesium alloys by the surfacetreatment method, 1302.

See also Kuznetsova, V. K., 4162, 5178.

Tanesa, A. Preparation of a complex fertiliser by treating rock-phosphate with nitric acid. III. Analytical methods, 1966.

 Tandoi, P. See Bucci, F., 749, 1924.
 Tandon, J. P. Studies in bivalent chromium salts.
 VIII. Estimation of nitro, nitroso and azo compounds, quinones and carbohydrates with chromous sulphate, 189.

Tandon, S. G., and Bhattacharya, S. C. Thiophen derivatives as analytical reagents. 2-Thiophen-

trans-aldoxime, a reagent for palladium, 4291.

Tandon, S. N. See Taimni, I. K., 1679, 3668, 3717.

Tang, T.-H. See Sun, T.-G., 555.

Tanikawa, K. See Chihara, G., 3422.

Tannert, S. Standardisation of gas regulation in graculation in graculation in graculation.

gas-analytical metabolic studies, 3546. Automatic vacuum regulation for the production of constant suction by water pumps at variable water pressures, 3548.

Tänzer, I. See Bennewitz, R., 2163.

Tanzer, M. L., and Gilvarg, C. Creatine and creatine kinase measurement, 3460.

Tao, T. See Yü, H.-Y., 2310.

TAPPI. See Technical Association of the Paper

and Pulp Industry.

Tarakanov, O. G. See Ryabov, A. V., 1097.

Tarasevich, N. I., Khlystova, A. D., and Pak, E. A. Chemico-spectrographic method for determining tungsten in molybdenum, 2205.

and Kozireva, G. V. Spectrographic determination of the impurities titanium and tantalum in niobium pentoxide, and titanium and niobium in tantalum pentoxide, 2181.

and Semenenko, K. A. Spectrochemical determination of niobium in rocks, 3210.

Tarasov, A. I., Kudryavtseva, N. A., Ioganson, A. V., and Lulova, N. I. Automatic analysis of flowing gases by means of the chromatograph KhPA-1,

Tarasov, N. Ya., Zatolokin, E. Ya., and Bozhko, E. A. Spectrographic determination of sodium and calcium in Babbitt metal, 2066.

 Tarasyok, T. S. See Bezugiyi, V. D., 5282.
 Tarayan, V. M., and Mushegyan, L. G. Separation of rhenium and molybdenum, 519. Colorimetric determination of rhenium in the presence of molybdenum, 4265.

Tarbet, C. S. C., and Daly, E. F. Infra-red vacuum spectrometer with prism/grating double monochromator, 833.

Tarkhov, G. N. See Pivovarov, V. M., 5508.

Tarladgis, B. G., Watts, B. M., Younathan, M. T., and Dugan, L., jun. Distillation method for the quantitative determination of malonaldehyde in rancid foods, 3988.

Tárnoky, K. E. See Kovács, G. S., 2042.
Tarrés Torras, A. See Raurich Sas, F.-E., 3943.
Tarutina, L. I. Quantitative determination of the composition of the copolymer of tetrafluoroethylene with trifluoroethylene by infra-red spectroscopy, 2345.

Tata, J. R., and Hemmings, A. W. Apparatus for centrifugal acceleration of paper chromatography,

Tattrie, N. H. See McInnes, A. G., 4009. Tatwawadi, S. V. Colorimetric titration of vanadium with alkaline ferricyanide, 460. See also **Deshmukh**, **G. S.**, 967, 1652.

Taubert, R. Theory of mass spectra, 2609.
Täufel, K., and Steinbach, K. J. Analysis of inulin,

and Zimmermann, R. Determination of the degree of oxidation of olefinic fats, 2992.

Taulli, T. A. Determination of sodium ions in acidic silica sol systems. measurement procedure, 4120. Solution potential

Tautt, J. See Myszkowska, K., 1181.
Taylor, D. H. See Nury, F. S., 743.
Taylor, I. E., and Marsh, M. M. Automatic analysis

of amino acids, 2891.

Taylor, J. G. V. See Merritt, J. S., 4750.

Taylor, J. K., and Smith, S. W. Coulometric titration of acids and bases, 2583.

Taylor, R. C. See Risgin, O., 3800.

Taylor, R. E. Determination of gases in plutonium, uranium and zirconium by vacuum fusion, 3732.

Taylor, S. R. See Brooks, R. R., 4798. Teague, H. J. See Carruthers, A., 5478.

Technical Association of the Paper and Pulp Industry. Iron in cellulosic materials, 1094.

Technicon International Ltd. analysing a liquid for carbon dioxide or other substance capable of being liberated in gaseous form, 798. Apparatus for use in analysing body fluids, 801. Colorimetric analysis and recording apparatus and method, 2523. Colorimeter, 5510

Teichert, K., Mutschler, E., and Rochelmeyer, H.

Analytical chromatography. II, 5491.

Teissier, A. The acidity of olive oils and its determination, 751.

Teitel'baum, B. Ya. See Dianov, M. P., 4360. Teixeira, E. R. See Ribeiro Teixeira, E. Tekell, G. S. See Fossan, D. D. van, 1107. Teller, A. See Forbes, J. W., 3078.

Teller, A. See Forbes, J. W., 3078.
Teller, D. N. See Cooperman, J. M., 3886.
Telyatnikov, G. V. See Andreev, A. S., 3161.
Temyanko, V. S. See Bardin, M. B., 3141.
Ten, T. See Shvedov, V. P., 4115.
Tensmeyer, L. G., and Wadsworth, M. E. Quantitative determination of adsorbed sulphates on thoria by means of infra-red spectroscopy, 80. Tentori, L. See Cavallini, D., 3909.

Terent'ev. A. P., Buzianova, M. M., and Obtemperan-skaya, S. I. Quantitative determination of vinyl cyanide with piperidine, 2295.

Fedoseev, P. N., and Ivashova, N. P. Use of the alkaline-earth metals for the detection and determination of elements in organic substances. 3284

and Kosin'skii, M. Photometric determination of cyclohexanone oxime in the presence of caprolactam, 5305.

Terent'eva, E. A., and Korshun, M. O. Polarographic determination of titanium in titanium organosilicon compounds, 4200.

Terlingen, J. B. A. See Buys Ballot, A. F. K.,

See Booth, E., 3725.

Tertipis, G. G., and Beamish, F. E. Separation of rhodium from iridium by copper powder, 4795. Tertoolen, J. F. W. Circuit for the determination

of the end-point by the dead-stop method, 1981. - Buijze, C., and Kolmeschate, G. J. van. Volumetric determination of manganese in cast iron and steel by the method of Lingane and Karplus,

- Detmar, D. A., and Buijze, C. Spectrophoto-metric determination of small quantities of lead in aluminium and copper alloys, in iron and steel and similar materials, 432.

Terui, S. See Fukamauchi, H., 1714.
Tesařík, K. See Krejči, M., 4659.
Tevebaugh, A. D. See Rechaitzer, L. A., 4590.
Tewari, K. K., and Krishnan, P. S. Colorimetric determination of orthophosphate in the presence of condensed phosphate, 4217.

Tewari, S. N., and Tripathi, D. N. Paper-chromatographic identification of barbiturates in toxicological analysis, 719.

See also Tripathi, D. N., 3977.

Teygeler, C. A. Determination of morphine in opium, 702.

Thakoor, N. R. See Athavale, V. T., 2714, 3234.
Thaler, H. Examination of coffee and coffee V. Determination of soluble substitutes. mannans in coffee infusions and extracts, 3511.

Thatcher, J. W. See Campbell, W. J., 2567.
Thayer, S. A. See Jellinek, M., 664.
Theal, S. See Forist, A. A., 724, 3406.
Theander, O. See Lidman-Safwat, S., 2332.
Theivagt, J. G., and Campbell, D. J. Determination of vitamin D in multi-vitamin mixtures after

separation by partition chromatography, 1582.

Theobald, L. S. Source of error from the use of

polyethylene bottles, 1979.

Thevenet, M. See Henry, R., 3451.
Thibert, R. J., and Ottenbrite, R. M. Polarographic determination of a-methyl-DL-cystine, 3908.

Thiel, C. G. See Porush, I., 4469, and Young, J. G., 4469.

Thiers, R. E., Margoshes, M., and Vallee, B. L. Ultra-violet photometer, 1215.

— See also Fuwa, K., 1618, 3572.

Thiery, P., and Baron, J. Chemical analysis of silica bricks, 1389.

Thoma, J. A., Wright, H. B., and French, D. Partition chromatography of homologous saccharides on cellulose columns, 3410.

Thomann, O., and Scherrer, A. Titrimetric determination of free carbon dioxide in water, 775.

Thomas, A. J. See Moss, P., 593.
Thomas, A. M. See Rochow, T. G., 5125.
Thomas, B. See Rothe, M., 3982.
Thomas, C. O., and Baker, B. B. Deter Detection and estimation of air-borne proteins by pyrolysis to hydrogen cyanide, 1585.

Thomas, D. N. Analysis of 2:4:5-trichlorophenoxyacetic acid isopropyl ester and 2:4:5-trichlorophenoxyacetic acid butyl ester mixtures, 5053.

— See also Witmer, F. J., 598.

Thomas, D. P. P. See Cook, E. R., 4940.

Thomas, G. [Liège, Belgium]. See Ciccar See Ciccarone, P. A., 3129, and Verly, W. G., 3129.

Thomas, G. [Lyons, France]. See Paris, R., 2031. Thomas, J. F. J., and Lynch, J. J. Determination of carbonate alkalinity in natural waters,

Thomas, R. S. Specimen carrier for use with the quartz-fibre "fishpole" micro-balance, 2510.

Thomason, P. F. See Miller, F. J., 1650, 1732, and Zittel, H. E., 1285.

Thompson, B. A. Analysis of thin metal films by

neutron activation, 2028.

Thompson, C. C. Determination of nuoroacetic acid and fluoroacetamide in plant material, 1972.

Thompson, C. J., Coleman, H. J., Ward, C. C., and Rall, H. T. De-sulphurisation for identifying

Sulphur compounds, 4811.

Thompson, H. D. See Flowe, L., 3181.

Thompson, H. V., Mayer, A., Padget, G., Chirnside, R. C., and Bennett, H. Direct routine determination of lime in magnesite and similar materials.

Thompson, J. F., and Morris, C. J. Separation of amino acids on ion-exchange resins, 224. Determination of amino acids from plants by paper chromatography, 670.

Morris, C. J., and Gering, R. K. Purification of plant amino-acids for paper chromatography, 669.

Thompson, J. K., and Wilson, C. L. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Metal-organic complexes of analytical significance. I. Stabilities of complexes of bivalent cations with anthranilic acid and its derivatives, 2031.

Thompson, N. R. See Crighton, J., 4837.
Thompson, P. E. See Kohberger, D. L., 3958.
Thompson, R. H. S. See Magee, W. L., 4952, and

Marples, E. A., 3934.
Thompson, T. G. See Barkley, R. A., 4518.
Thomson, D. A. See Chalmers, R. A., 5065.

Thorell, B. See Chance, B., 2556.

Thorn, G. D., and Ludwig, R. A. Paper chromatography of derivatives of ethylenebisdithiocarba-

mic acid, 4341.

Thornburg, W. See Werum, L. N., 4570.

Thorne, R. P. See Mackay, K. J. H., 5237.

Thornton, E., and West, A. R. High-molecular-weight mass spectrometry. Experience with a modified Metropolitan-Vickers MS 2 mass spectrometer, 3593.

Thornton, M. J. Size analysis of phenothiazine, 3482.

Thow, D. H. See Miller, C. C., 972. Tichá, A. See Sedláček, B. A. J., 3510. Tietz, H. See Frehse, H., 1970.

Tiews, J. Chemical determination of vitamin D.

Tigaud, J. See Enselme, J., 3441. Tikhonov, V. N. See Tananaev, N. A., 1302. Tikhonova, V. S. See Aleksandrov, G. P., 3699. Tillu, M. M. See Athavale, V. T., 3671, 3698.

Timberlake, C. F. Interfering electrode reaction during polarography of sulphur dioxide solutions

containing oxygen, 1721. Timokhin, I. M. See Finkel'shtein, M. Z., 1095. Ting, S. F., Jeffery, W. S., and Grove, E. L. Comparison of the alkali-metal methoxides in the high-frequency titration of acids in dimethylformamide, 3610.

Tinker, P. B. H. Determination of exchangeable calcium and magnesium in highly leached soils, 3535.

Tinkler, F. H., Hanley, J. B., and Lehman, R. W. Use of large samples in the determination of vitamin A in mixed feeds fortified with dry vitamin-A supplements, 4531.

Tipper, C. F. H. See Cartlidge, J., 465, 4321. Tipper, D. J. See Barker, S. A., 1849. Tiptsova, V. G. See Busev, A. I., 56, 2102,

Tirouflet, J., and Laviron, E. Separation of analogous or isomeric compounds in classical polarography and oscillographic polarography, 4297.

Tissier, C. See Pariaud, J. C., 2031. Titaev, A. A., and Larskil, E. G. Staining of glycoproteins on electropherograms, 680.

Titov, F. S. See Mairanovskii, S. G., 4602. Titov, V. I. See Brudz', V. G., 3169.

Tkachenko, N. S., and Davidenko, P. I. Determination of metallic iron impurity in manganese ores, 4775.

Tobias, H. See Barbier, M., 2410.

Toby, S. Apparatus for the micro-determination of methane, 1628.

Todd, H. J. See Walker, I. K., 2004. Todorov, Y. See Goranov, I., 2898. Toei, K. See Iwachido, T., 3601. Toepler, E. W. Microbiological assay for total pantothenic acid, 4504.

MacArthur, M. J., and Lehman, J. Chromatographic separation of vitamin-Be components in food extracts, 4502.

Toerien, F. v. S. Volumetric determination of copper in a carbonatite ore, 1668.

Tokar, G. See Simonyi, I., 4355.
Tokimoto, Y. See Fukamauchi, H., 1714.
Tölgyessy, G. Radiochemical titration with labelled potassium ferrocyanide volumetric solution, 9.

- Saršúnová, M., and Majer, J. Radiometric analysis of some pharmacopoeial ointments and dusting powders. Determination of zinc, 2958. See also Hostomský, J., 4823, and Saršúnová, M., 2960, 4467

Tolstikova, E. I. See Serebrennikova, M. T., 479.

Tomášek, V. See Mikeš, O., 1602.
Tomasi, E. J. See Peck, L. C., 3241.
Tombs, M. P., Souter, F., and Maclagan, N. F.
Spectrophotometric determination of protein at 210 mµ, 2396.

Tomich, E. G. See Bedford, C., 1483.
Tomimatsu, Y. See Launer, H. F., 1413, 1788.
Tomonari, A. See Iwasaki, I., 2221.
Tompsett, S. L. Determination of aminophenols and aminobenzoic acids. Extraction procedures applicable to biological materials, 3891. Determination and identification of cyanide in biological material, 4908.

Tonolini, F. See Lonati, R. D., 4526.

Tonosaki, K., and Otomo, M. Separation of uranium from aluminium by cation-exchange resin, 489. Separation of uranium from titanium with cation-exchange resin, 4252.

Toogood, M. J. Volumetric determination of thallium in sodium iodide crystals, 2104.

Toohey, J. I. See Barker, H. A., 3941.

Torchinskil, Yu. M. Determination of mercapto groups in myosin by amperometric titration,

Toren, P. E. See Stafford, C., jun., 2341. Torkelson, T. R. See Stewart, R. D., 1482. Torocheshnikov, N. S., and Seminova, V. A.

matographic analysis of gas mixtures containing hydrogen, nitrogen and methane, 4817.

Torok, T., and Petho, A. Displacement of the calibration curve through defocusing of the Littrow spectrograph, 5500.

Torras, A. T. See Tarrés Torras, A.
Torres, C. See Binkley, F., 4982.
Torres, J. F. Determination of glucose in blood, 2875.

Toth, J., and Graf, L. Determination of the petrol content of natural gas by means of chromatographic separation and micro-combustion, 2320.

Tóth, P., Kugler, E., and Kováts, E. Characterisation of organic compounds by gas chromatography. II. Precision gas chromatograph, 2535. **Toth, Z.,** and **Krasznai, I.** Determination of the esters of carbamic acid [urethanes], 2297.

Touchstone, J. C., Greene, J. W., jun., and Kukovetz, W. R. Phosphoryl chloride enhancement of fluorescence and absorbance of oestrogens in sulphuric acid, 2413.

Tourtellottee, W. W., Skrentny, B. A., and DeJong, R. N. Study of lipids in the cerebrospinal fluid IV. Determination of free and total cholesterol, 2406.

Touze-Soulet, J. M. See Montant, C., 4569.

Továrek, J. See Ševela, M., 1880.
Towarek, J. See Ševela, M., 1880.
Towarek, G. H. N. See Ibrahim, R. K., 5359.
Townley, C. W. See Brown, C. T., 4674.
Trabanelli, G. See Del Bianco, F. M., 2971.
Trabanelli, G. See Bighi, C., 473.
Tramm, R. S. See Chernikov, Yu. A., 96.
Trannhort J. See Bugn, J. 1995 and M.

See Buzon, J., 1995, and Marvillet,

Tranchant, J. S L., 5336, 5337.

Trapeznikov, V. A. See Ageev, N. V., 3222.
Treadwell, C. R. See Vahouny, G. V., 4976.
Trémillon, B. See Guérin, G., 4610, and Vedel, J., 4101.

Trent, F. M. See Darling, D. J., 4061. Tretow, E. F. See Morrow, K. A., 2141. Tribastone, S. See Rio, A., 3835.

Tribastone, S. See Morrow, A. A., 2121.

Tribastone, S. See Rio, A., 3835.

Tricaud-Redel, M. E. See Bargeton, D., 5387.

Tridot, G. See Châtelet, M., 2031.

Trifiro, E., and Proto, D. Determination of fructose and glucose in the presence of each other, 1064. Trifonova, L. K. See Korenman, I. M., 3168. Tripathi, D. N., and Tewari, S. N. Determination

of metallic poisons by paper chromatography,

See also Tewari, S. N., 719.

Tripathi, K. K., and Banerjea, D. Nicotinamidoxime as an analytical reagent. I. Spectrophotometric determination of uranium, 1341; II. Spectrophotometric determination of cobalt, 1765.

Trivisonno, C. F. See Vita, O. A., 975. Trnovec, T. See Zbořil, V., 4399. Troëng, T. See Bethge, P. O., 3373.

Truchement, J. L., Ferry-Wilczeck, A., and Parenteau, J. P. Determination of hydroxyethoxy-propanediol, 5271.

Truhaut, R., and Boudene, C. Micro-determination of mercury in biological media of animal origin,

— See also Fabre, R., 205.
Trupin, K. See Dickman, S. R., 241.
Trusell, F., and Diehl, H. Phenyl 2-pyridyl ketoxime, a reagent for iron in strong alkalis. Determination of oxidised iron in the presence of metallic iron, 3250.

Trutnovsky, H. Nitrogen determination, 3787.

— See also Sobotka, M., 561.

Tryon, M. See Strassburger, J., 4886.

Trzaski, M., and Lisowski, Z. Quantitative determination of glucose in urine, 1118.

Trzebiatowski, W., Szaynok, A., and Rozdział, P.

Semi-quantitative spectrographic determination of lanthanides in thoria, 2683.

Trzebiński, J., and Ehrenberg, L. Determination of starch solubilised by means of irradiation, 1829.

Trzeciak, M. J. samples, 3693. Standard titanium - hydrogen

— See also Hansen, W. R., 936. Tsai, L.-W. See Wang, S.-C., 3870.

Tsanev, R. G., and Markov, G. G. Spectrophotometric determination of nucleic acids, 3921.

Tsao, D. P. N. Use of citric acid and tartaric acid buffers in the extraction of solanaceous alkaloids by centrifugation, 2921.

Tsarevskaya, E. A. See Shafershtein, I. Ya., 452. Tschapke, H. Chemical determination of vitamin D.

Tsekhovol'skaya, D. T., Zavaritskaya, T. A., Denisov, G. S., and Chulanovskii, V. M. Application of infra-red spectroscopy to the analysis of titanium tetrachloride, 5192.

Tsimmergakl, V. A., and Krasnova, Z. A. Determination of zinc in metallic cadmium, 1289. Polarographic determination of thallium and lead

in cadmium, 4684.

Tsintsevich, E. P., Alimarin, I. P., and Nikolaeva, L. I. Sorption of indium by ion-exchange resins from solutions containing hydrogen halides, 1307.

— See also Alimarin, I. P., 3167, 4166.

Tsivtsivadze, T. A. See Eristavi, D. I., 2738.

Tsubaki, I. Preparation of standard solutions of manganese^{III} by the reduction of permanganate

with hydrogen peroxide, 1653.

Tsuchiya, A., and Osawa, Y. Determination of a minute amount of water in petroleum products by

the Karl Fischer method, 2324.

Tsuji, T. See Sudo, T., 169.

Tsuk, L., and Zöllner, G. Determination of isopropylbenzene hydroperoxide by using "dead-'end-point indication, 2792.

Tsukamoto, T., and Yuhi, K. Studies on halogenosalicylaldehyde. I. As a reagent for primary

amines, 585.

Tsunoo, S. See Oda, N., 437.
Tsutsumi, C. See Kubo, S., 636.
Tsuyama, H. See Okamoto, J., 3648.
Tsvetkov, V. N., and Shaska, V. S. Visual nephelo-

5487

Tsýb, P. P. See Sayun, M. G., 1658. Tsýplyatnikov, G. P. See Aleskovskii, V. B., 4767. Tsyvina, B. S., and Kon'kova, O. V. Determination of aluminium in titanium and its alloys by ionexchange chromatography, 76. Complexometric determination of scandium, 3171.

Tszé, Y.-S. See Alimarin, I. P., 2672, 3170. Tuck, B., and Osborn, E. M. Colorimetric microdetermination of copper in water, 4517.

Tucker, H. T. See Pugh, C. R., 4670.

Tuckerman, M. M., Hodecker, J. H., Southworth,
B. C., and Fleischer, K. D. Micro- and semimicro determination of arsenic in organic compounds, 3294.

— See also Klein, S., 5411.

Tuddenham, W. M. See Lyon, R. J. P., 4799.

Tudge, A. P. Analysis of oxygen isotopes in orthophosphate-use in the measurement of palaeotemperatures, 3702.

Tuffly, B. L. See Kourey, R. E., 2777.

Tulach, J. See Stefl, M., 4423.

Tulus, M. R., and Ulubelen, A. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956. Paper-chromatographic separation and colorimetric determination of santonin,

Tulyupa, F. M. See Usatenko, Yu. I., 27. Tûma, H., and Vyklický, M. Isolation of structural components of iron - aluminium - carbon alloys,

Tumanov, A. A., and Khazanov, P. S. Determina-tion of potassium in solutions by its natural radioactivity, 879.

Tumanova, T. A. See Mishchenko, K. P., 5220. Tunnicliff, D. D. Solvents for ultra-violet spectrophotometry, 2559.

Tupý, J. See Hrabětová, E., 4426.

Turchin, N. M. See Kirillov, P. L., 4121. Turco, A., Scoffone, E., and Chillemi, D. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956. Determination of the C-terminal amino acid in a polypeptide chain with ammonium thiocyanate labelled with sulphur-35. Note I, 2031. See also Scoffone, E., 2031.

 Turcu, L. See Bainlescu, G., 1322.
 Turi, C. J. Analytical studies of surface-active substances. I. Polyoxyethylene glycols, 618;
 II. Conjugated poloxyethylene glycols, 2338. Analysis of hair dyes, 1452.

- and **De Guili, G.** Analytical studies of surface-active agents. IV. Differentiation between polyoxyethylene glycol and polyoxypropylene

glycol, 4378.

Turkel'taub, N. M. See Zhukhovitskii, A. A., 3354. Turnbull, J. H. See Lee, W., 4353, and Newman, P. M., 4430.

Turner, M. See Wood, D. F., 3194.

Turovtseva, Z. M. See Kuznetsov, L. M., 2127. Turowska, M. See Michalski, E., 5.

Turska, E., and Wolfram, L. Determination of polyamide end-groups, 625.

Tuschhoff, J. V. See Bandelin, F. J., 5322.
Tuskan, W. G. See Barney, J. E., II, 1444.
Tuszyńska, S. See Myszkowska, K., 1181.
Tutundžić, P. S., and Paunović, M. M. Coulometric determination of hydrogen peroxide with permanganate, 4658.

Paunović, N. M., and Paunović, M. M. Coulometric permanganometric determination of ferrocyanide and iodide ions, 5246.

Tuzson, J. Paper chromatography of corticosteroids

at room temperature, 3456.

Twedt, R. M., Lichstein, H. C., and Glick, D. Studies in histochemistry. LII. Quantitative microbiological determination of coenzyme A in microgram amounts of tissue, 3933.

Twickler, M. C. See Juvet, R. S., jun., 3820. Tykva, R. Portable apparatus for the measurement of radioactivity of soft β -emitters, 3100.

and Grünberger, D. Measurement of carbon-14 radioactivity, 3099.

Tyler, C. Assay of acetylcholine with the isolated semispinalis cervicis muscle of the chick, 3895.

Tyllová, M. See Dušinský, G., 4457. Tyou, P. Application of gas-phase chromatography to the determination of hydrogen, nitrogen and

oxygen in steel and cast iron, 5248. - and Humblet, L. Colorimetric determination of small amounts of sulphur in steel and in pure iron

and cobalt, 3758.

Tyutina, N. A., Aleskovskii, V. B., and Miller, A. D. Methods for concentrating niobium ions in natural waters, 463.

Tyutyunnikova, T. I. See Kisilevskii, V. V., 366, and Ugnyachev, N. Ya., 363, 365.

U

Udalov, Yu. F. See Mokhov, L. A., 83. Udenfriend, 8. [Symposium on catecholamines.] Survey of chemical and physical methods for measuring catecholamines, 4938.

See also Chirigos, M. A., 3401, Mitoma, C., 3431, Sjoerdsma, A., 3426, and Weissbach, H., 5390.

Udris, J. See Haslam, J., 2848. Ueda, Y. See Momose, T., 651, 1814, 2031, 2311.

Uehara, M. See Fukamauchi, H., 1696, 1714. Uelner, A. F. See Stewart, F. N., 2804.

Ueno, Kaoru. See Nozaki, Toru, 478.

Ueno, Keihei. See Danzuka, T., 408, and Hayashi, K., 5240.

Ueno, Kozo, and Tachikawa, T. Potentiometric titration of antimony. III and arsenic. III with iodine solution, 4219.

Ugnyachev, N. Ya., and Alferova, V. N. Determina-tion of sodium oxide and sodium carbonate in sodium ferrite, 526.

and Tyutyunnikova, T. I. Spectrographic determination of lithium hydroxide in potassium -

lithium electrolytes, 363.

Tyutyunnikova, T. I., and Dubrovina, T. P. Flame-photometric determination of sodium in calcium metal and calcium hydride, 365.

Uhlich, U. See Fischer, W., 4033. Uhlir, M. See Otto, K., 3736. Uhlmann, E. See Riedel, O., 23.

Ui. M. Micro-determination of reducing sugars in blood, 2370.

Újhidy, A. See Kálmán, L., 1445. U.K.A.E.A. See United Kingdom Atomic Energy Authority.

Ulezko, A. D. See Grunina, A. N., 520. Ulfendahl, H. R. See Öbrink, K. J., 2586.

Ullmann, J. Determination of fluorides by mer-curimetric titration of lead chloride fluoride,

Ulubelen, A. See Tulus, M. R., 2031.
Umland, F., Hoffmann, W., and Meckenstock,
K.-U. The partition of metallic 8-hydroxyquinoline compounds between water and organic solvents. VI. Experiments on the hydroxyquinolinate complexes of beryllium, strontium and barium, 4676.

and Meckenstock, K .- U. Partition between water and chloroform of bivalent-metal chelate complexes of 8-hydroxyquinoline substituted in the

7-position, 862.

Underwood, A. L. See Citron, I., 5221, and Under-

wood, E. E., 3615. Underwood, E. E., and Underwood, A. L. Titration of metal oxinates in ethylenediamine with

potassium methoxide, 3615. Ungnade, H. E., Igel, E. A., and Brixner, B. B. Melting-point apparatus for simultaneous observation of samples in transmitted and reflected light, 1626.

Union Carbide & Carbon Corp. See Union Carbide

Union Carbide Corp. Fluid analysis, 2015; 4596. United Kingdom Atomic Energy Authority. Determination of copper in beryllium metal, 32. Determination of silicon in beryllium compounds (fluoride, hydroxide and ammonium fluoro-beryllate), 33. Spectrographic determination of strontium in the ash of bone, milk and vegetation, 42. Determination of copper in fused mixtures of sodium, zirconium and uranium fluorides, 377. Determination of free metal and carbide carbon in beryllium metal, 384. Determination of combined nitrogen in beryllium metal, 385. Determination of beryllium oxide in beryllium fluoride. 391. Determination of iron in beryllium compounds (fluoride, hydroxide and ammonium fluoroberyllate), 392. Determination of copper in beryllium compounds (fluoride, hydroxide and ammonium fluoroberyllate), 393. Determination of niobium in bismuth-base alloys, 462. Determination of uranium in uranium dioxide, 487. Determination of uranium in bismuth-base alloys, 490. Separation of the major impurities in uranium dioxide prior to spectrographic examination, 494. Determination of silicon in uranium dioxide,

United Kingdom Atomic Energy Authority-cont.

496. Determination of vanadium in uranium dioxide, 497. Determination of chlorine in beryllium, thorium or uranium metals or their oxides, 506. Determination of manganese in beryllium compounds (fluoride, hydroxide and fluoroberyllate), 515. Determination of nickel in beryllium compounds, 547. Determination of radioactivity in water, 779. Determination of tin in Zircaloy-2, 925. Determination of titanium in beryllium metal, 934. Determination of nickel in zirconium and in Zircaloy-2, 940. Determination of molybdenum in fused mixtures of sodium. zirconium and uranium fluorides, 970. mination of tungsten in Zircaloy-2, 971. Determination of iron in uranium dioxide, 1354. Determination of iron in low-grade uranium ores, 1355. [Reports on analytical methods.] Determination of combined nitrogen in zirconium metal, 2587; Determination of combined nitrogen in titanium metals, 2587; Gravimetric determination of sulphate in uranium concentrates, 2587; Absorptiometric determination of copper in beryllium metal, 2587; Absorptiometric determination of silicon in beryllium, 2587; Absorptiometric determination of manganese in beryllium metal, 2587; Absorptiometric deter-mination of iron in beryllium metal, 2587; Absorptiometric determination of chromium in beryllium metal, 2587; Absorptiometric determination of nickel in beryllium metal, 2587; Determination of free carbon in beryllium metal (by ignition, with a gasometric finish), 2587; Determination of combined carbon in beryllium metal (by ignition, with a gasometric finish), 2587; Absorptiometric determination of fluorine in beryllium, 2587; Absorptiometric determination of iron in uranium - molybdenum alloys, 2587; Spectrographic determination of lithium in magnesium · metal, 2587; Absorptiometric and volumetric determinations of combined nitrogen in beryllium metal (modified Allen method). 2587; Determination of thorium in thorite ores. 2587; Gravimetric determination of molybdenum in uranium - molybdenum alloys, 2587; Spectrographic determination of magnesium in vanadium, 2588; Spectrographic determination of lithium, sodium and potassium in beryllium flake and powder (carrier distillation technique), 2588; Inspection of ammonia liquor, 2588; Inspection of hydrazine dihydrochloride, 2588; Inspection of aluminium nitrate, 2588; Inspection of sodium nitrite, 2588; Absorptiometric determination of uranium in reactor fuel processing plant solutions (thiocyanate procedure), 2588; Inspection of kerosene, 2588; Determination of uranium in urine, 2588; Inspection of nitric acid, 2588; Inspection of hydrazine mononitrate, Inspection of butex (bis- $\beta\beta$ -butoxyethyl ether), 2588; Inspection of sodium dichromate, 2588; Inspection of potassium bromate, 2588; Inspection of hydrochloric acid, 2588; Radiochemical determination of ruthenium-103 and -106 in reactor fuel processing and plant solutions, 2588; Inspection of sulphamic acid, 2588; Inspection of solid sodium hydroxide and caustic liquor, 2588; Inspection of iron powder, 2588; Inspection of potassium bromide, 2588; Inspection of ammonium nitrate, 4090; Inspection of oxalic acid. 4090: Determination of plutonium in uranium plant solutions, 4090; Determination of caesium-137 in urine, 4090; Determination of strontium-89 and strontium-90 in urine, 4090; Determination of \(\beta\)-activity (transmitted through a total absorber

United Kingdom Atomic Energy Authority-cont. of thickness 5 mg of aluminium per sq. cm) in plant solutions containing plutonium, 4090; Assay of urea, 4090; Methods for the concentration of impurities from Windscale raw materials prior to spectrographic analysis by the iron flux technique, 4090; Spectrographic analysis of impurities in sodium dichromate, 4090; Spectrographic determination of impurities in potassium bromide and bromate and sodium nitrite by direct excitation, 4090; Inspection of tributyl phosphate, 4090. Determination of radium in pitchblende ore and barium sulphate concentrates, 2638. Determination of manganese in beryllium compounds (fluoride, hydroxide and ammonium fluoroberyllate), 2720. Spectrographic analysis of inorganic non-metallic materials by the barium chloride flux method, 3124. Determination of caesium-137, 3133. Absorptiometric determination of molybdenum and tungsten in zirconium metal, 3193. Radiochemical determination of strontium-89 and strontium-90 in plant solutions, 3645. Determination of chromium in zirconium metal and Zircaloy-2, 4208. Absorptiometric determination of plutonium in the feed solution to the primary separation plant, 4256. Mass spectrometer utilising a thermionic ion source, 4627. Determination of the alpha-activity due to uranium in aqueous sludges, 4763.

Uno, T., Kono, M., Miyai, T., and Yasuda, H. Determination of sulphafurazole, 2945.

See also Kakemi, K., 3485.

Unterharnscheidt, F. See Carcasona, A., 4954. Uosukainen, M. See Hirsjärvi, V. P., 4267, and Salovius, B., 4780.

Upson, U. L., and Miller, D. G. A y-counting method for the determination of uranium-235 in enriched uranium, 979.

Urazekova, A. B. See Peshkova, V. M., 4718. Urbański, T., Kwiatowska, S., and Kutkiewicz, W. Colour reaction of polynitro compounds (Janovsky

reaction), 1811. Urbański, T. S. Separation of beta- and gammaradioactive uranium decay products from uranyl nitrate by solvent extraction, 5233.

Salting-out paper chromatograms of Uri, J. antibiotics, 250.

Urone, P. Spectrophotometric study of olefin metal ion co-ordinate covalent compounds,

Urrutia, H., Ramírez, A., and Aguayo, N. Microdetermination of iodine in organic compounds,

Uruno, S. See Ichikawa, F., 5235. Usatenko, Yu. I., and Bekleshova, G. E. Amperometric analysis with cupferron. II. Determination of titanium in steel, 535. Amperometric titration of mercaptobenzothiazole solution, 3825.

and Klimkovich, E. A. Decomposition of chrome-magnesite by means of sintering, 3277. - and Shumskaya, A. I. Amperometric titration of silver and mercury with thiourea solution,

4133. and Tulyupa, F. M. Separation of copper and

mercury by ion-exchange chromatography, 27. Utsumi, S. See Iwasaki, I., 2221, and Shiota. M. 2221.

Uzumasa, Y., Nishimura, M., and Nasu, Y. Determination of bromide and iodide in natural waters, 1954.

See also Hikime, S., 3721.

Uzzan, A. Use of ultra-violet spectrophotometry for the evaluation and identification of olive oil, Vachek, J. Polarographic and photometric determination of 6-mercaptopurine, 5006.

Václavínek, J. The gas chromatograph as a semimicro analyser for gases obtained from metals by vacuum extraction, 3556.

Vadodaria, D. J. See Parikh, P. M., 726.
 Vahouny, G. V., Mayer, R. M., Roe, J. H., and Treadwell, C. R. Determination of 3β-hydroxy-

sterols with anthrone reagent, 4976.
Vaidya, G. M. See Athavale, V. T., 3671.
Vaikuntam, M. S. See Deshmukh, G. S., 967.
Vaillancourt, G. See Klaveren, F. W. van, 5490. Vaillant, M. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.]

Determination of traces of carbonyl compounds.

Vainshtein, É. E., and Pavlenko, L. I. Spectro-graphic determination of molybdenum in granitoids, 1340.

See also Korolev, V. V., 67, 3566.

Valadon, F. See Germain, J. E., 4374. Valdehita, M. T., García Olmedo, R., and Villanúa, L. Artificial food colours. V. Circular paper chromatography of permitted water-soluble colours.

Valdes-Diaz, O. See Green, M. N., 5380. Valecko, E. R. See Burton, R., 2177. Valenta, M. See Icha, F., 1648. Valentine, R. See Coal Industry (Patents) Ltd.,

4597 Valentini, G., Conti, M. L., and Lo Moro, A. Deter-

mination of boron as a boron - curcumin complex in materials for nuclear energy use, 1297.

Valentová, M. See Velek, M., 1109.
Vallee, B. L. See Baker, M. R., 3571, Fuwa, K., 1618, 3572, and Thiers, R. E., 1215.

Valmet, E. See Svensson, H., 3055. Valtr, Z. See Leopold, H., 2776. Valverde, E. Photometric determination of apparent glucose in blood, 4917.

Van Aman, R. E., Hollibaugh, F. D., and Kanzel-meyer, J. H. Spectrophotometric determination of antimony with Rhodamine B, 2691

Van Atta, R. E., and Jamieson, D. R. Polarographic determination of acetone, 1067

Van Beneden, G. See Beneden, G. van.
Van Boetzelaer, G. L. See Boetzelaer, G. L. van.
Van Bruggen, J. T. See Marcó, A., 2585.
Vancea, M., and Voluşniuc, M. Gravimetric determination of lead as lead phosphate, 72. Gravimetric determination of arsenates, 1713.

Van Cleve, J. W. See Wise, C. S., 1066. Vancompernolle, G. See Fripiat, J. J., 4706. Vandall, C. See Jehenson, P., 1363. Van de Langerijt, J. J. A. M. See Langerijt, J. J. A. M. van de.

Vandenbelt, J. M. Collaborative readings with the Cary-14 spectrophotometer, 4080.

Vanden Berg, R. H. See Brandt, M., 2824 Vanden Heuvel, W. J. A. See McCurdy, W. H., jun., 1254.

Van de Pol, A. See Pol, A. van de. Van der Haak, P. J. See Haak, P. J. van der. Van der Poel, P. W. See Poel, P. W. van der. Van der Pol, E. W. See Pol, E. W. van der. Van der Pol, H. J. See Pol, H. J. van der.

Van der Schee, A. C. See Deeleman, P. R., 1838. Van der Sijde, D. See Sijde, D. van der. Van der Wegen, T. P. A. See Wegen, T. P. A. van

Van der Westhuyzen, J. P. See Westhuyzen, J. P.

Van Dijck, L. A. See Dijck, L. A. van.

Van Fossan, D. D. See Fossan, D. D. van. Van Gent, C. M. See Gent, C. M. van. Van Gheluwe, J. E. A., Stock, A. L., and McRae, J. P. Nomograph technique applied to routine refractometric analysis of wort and beer, 2987.

Van Gogh, H. See Gogh, H. van. Van Handel, E. Separation and chemical assay of lipid classes, 1877

lipid classes, 1877.

Van Hees, W. See Hees, W. van.

Vantčkova, E. See Buděšínský, B., 4340.

Van Kampen, E. J. See Kampen, E. J. van.

Van Klaveren, F. W. See Klaveren, F. W. van.

Van Kolmeschate, G. J. See Koeckhoven, L. van.

Van Kolmeschate, G. J. See Kolmeschate, G. J. van.

Van Kooten, E. H., Mosen, A. W., and Waterbury, G. R. Analysis of lithium arsenide, 364.

— See also Henicksman, A. L., 3382. Van Laar, B. See Laar, B. van. Van Meurs, N. See Meurs, N. van.

Van Niekerk, J. N., and Wet, J. F. de. Trace analysis by X-ray fluorescence using ion-exchange resins, 5136.

— See also Herbstein, F. H., 3744. Van Norman J. D., and Osteryoung, R. A. Determination and reactions of some acidic oxy-anions in fused chlorides and nitrates, 4645.

Van Oss, C. J., and Beyrard-Benchemoul, N. R. Electrophoretic separation of isotopic ions, 2027. Vanossi, R. Identification of scandium, 417.

Vanossi, R. Identification of scandium, 417.
Vanoverberghe, L. See Mevel, N., 4031.
Van Pelt, J. G. See Pelt, J. G. van.
Van Pelt, J. A. C. See Pinxteren, J. A. C. van.
Van Rede, C. See Rede, C. van.
Van Romeren, E. H. S. See Someren, E. H. S. van.
Van Someren, E. H. S. See Someren, E. H. S. van.
Van Someren, G. R. See Someren, G. R. van.
Van Tuyl, H. H. See Bierlein, T. K., 2214.
Van Wijk, H. F. See Wijk, H. F. van.
Van Zijl, H. J. M. See Zijl, H. J. M. van.
Varde, M. S. See Athavale, V. T., 2714, 3234.
Varga, A. See Solymosi, F., 2189.
Varlamov, V. P. See Kudymov, B. Ya., 1186.
Varner, E. L. See Baumgartner, W. E., 1495.
Varsel, C. J., Morrell, F. A., Resnik, F. E., and
Powell, W. A. Qualitative and quantitative
analysis of organic compounds. Use of lowvoltage mass spectrometry, 4298.

voltage mass spectrometry, 4298.

Varshavskaya, É. S. See Yashchenko, M. L., 4662.

Vass, M. L., and Kshatriya, K. C. N-(Hydroxymethyl)-3- and -4-nitrophthalimides as reagents for the characterisation of amines, 2289.

Vašák, V. Polarographic determination of arsine in gas mixtures, 2690.

Vašáková, E. See Fischer, J., 4401. Vasil'ev, N. P. See Pisarev, V. D., 3255. Vasina, N. T. See Shat'ko, P. P., 948.

Vasserberg, A. V. Photometric determination of cobalt, 4286.

Vassiliades, C., and Manoussakis, G. Spectrophoto-metric determination of iron^{III} with o-dianisidine,

Vastagh, G. See Szabolcs, E., 1900.
Vaughan, D. J. See Langford, W. J., 1460, 2337.
Vavrečka, M. See Novák, M., 4987.
Vdovenko, M. E., and Spivakovskaya, N. E. Use of EDTA for determining chromium in steel, 143. EDTA for determining chromium in steel, 143. Veale, C. R. Determination of traces of selenium in

tellurium, 4238. Separation and determination of traces of quadri- and sexa-valent selenium in telluric acid, 4239.

VEB Leuna-Werke "Walter Ulbricht". Process and device for testing solids, liquids or gases for the presence of substances forming azo dyes, 2331.

Vecchione, C., Fati, S., and Piccoli, P. Determination of iron in urine, 2361.

vecera, M., and Synek, L. Quantitative organic analysis. XXI. Nitrogen determination with tricobalt tetroxide as combustion catalyst, 2749; XXVI. Micro-determination of nitrogen in organic compounds with tricobalt tetroxide as combustion catalyst, 4310.

Vojtěch, F., and Synek, L. Quantitative organic analysis. XXII. Rapid automatic combustion of organic substances. Micro-determination of

carbon and hydrogen, 3781.

Voláková, B., Kozáková, M., and Jureček, M. Identification of organic compounds. XXXII. Identification and separation of aliphatic primary amines as N-alkyl-3:5-dinitrobenzamides, 5286. See also Jureček, M., 5270, and Petránek, J., 3321.

Večeřa, Z. See Bieber, B., 1758. Večerek, B. See Hynie, I., 4920. Vecsernyés, L., and Pozsgay, G. Spectrochemical analysis of the binder films of micro-crystalline layers of zinc sulphide, 2636.

Vedel, J., and Trémillon, B. Voltammetry of the system hydrogen - perchloric acid at a platinised platinum electrode. Coulometric preparation of a solution of perchloric acid in anhydrous methyl

cyanide, 4101.

Veibel, S. Review of the characterisation and determination of acids and acid anhydrides, 580. International Symposium on Microchemistry. Birmingham, 1958.] Survey of methods useful in functional-group determination of organic

substances, 3102.

Veiga, J. S. See Santos Veiga, J.

Veis, A. R., and Ievin'sh, A. F. Determination of potassium, rubidium, caesium and ammonium by high-frequency titration with sodium tetra-

phenylboron, 369.

Veitsman, R. M. Photometric determination of titanium as the molybdophosphotitanium complex, 75. Photometric determination of niobium in carbide mixtures, 949.

Veivo, J. See Näsänen, R., 2031.
Vejdělek, Z. J., and Kakáč, B. Colorimetry of digitalis glycosides, 2930.

Vejmělek, B. See Bieber, B., 1758. Vejvoda, E. See Johnson, A. J., 2215. Velasco, H. G. See Gómez Velasco, H.

Velek, M., and Valentová, M. Complexometric determination of calcium in serum, 1109. Veleker, T. J. See Dyck, R., 2202, and Ropp, R. C.,

Velniceriu, A., and Gavăt, L. M. Determination of total organic chlorine in agricultural pesticides with sodamide, 3019.

Velten, R. J. See Goldin, A. S., 1677, and Sodd,
V. J., 4028.
Vélut, M., and Jourda, J. Gas-chromatographic

analyser and recorder, 1610.

Vena, C. de. See Covello, M., 3416. Venable, S. H. See Lacoste, R. J., 1096. Venetta, B. D. Microscope phase fluorimeter for determining the fluorescence lifetimes of fluorochromes, 1216.

Venkateswarlu, C. See Athavale, V. T., 4743, and Nadkarni, M. N., 3753. Venkatrao, S. See Venkat Rao, S.

Yenkat Rao, S., Krishnamurthy, K., Swaminathan, M., and Subrahmanyan, V. Estimation of uric acid in insect-infested foodstuffs, 1172; 2975. Paper-chromatographic determination of uric acid in wheat flour infested by Tribolium. castaneum, 3981.

Ventura, M. See Gracián, J., 753.
Venturello, G., and Gualandi, C. Determination of sulphur and phosphorus in iron alloys with exchange resins, 1015.

Gualandi, C., and Mazzei, I. Separation of

alkali metals by ion-exchange resins. I, 2060.
Vercellone, A. See Capaccioli, T., 1699.
Vercillo, A. See Di Stefano, F., 1173.
Verdier, C. H. de. See Ludwig, H., 5083.

Verges, G. Colorimetric determination of folic acid,

Verhun, J. Determination of copper and lead in

cast iron and steel, 2230. Verly, W. G., Hunebelle, G., and Thomas, G. Determination of tritium in a proportional counter. [1], 3129.

 See also Ciccarone, P. A., 3129.
 Verma, M. R., Bhuchar, V. M., Agrawal, K. C., and Sharma, R. K. Colorimetric estimation of tervalent chromium, 965.

Bhuchar, V. M., Mathur, S. K., and Sharma, S. S. Determination of sulphuric acid in copper plating

- Dass, R., and Gupta, P. K. Paper-chromato-graphic identification of 1- and 2-naphthols when present together, 4361.

Verma, R. M., and Bose, S. Volumetric estimation of formates by oxidation with mercuric chloride.

Vernetti, J. B. See Witmer, F. J., 598. Vernotte, P. See Seris, G., 4059, 4747.

Vernyi, E. A., and Egorov, V. N. Spectrographic determination of aluminium in uranium, 4254

Vertyulina, L. N., and Korshunov, I. A. Polarographic determination of hexaethyldilead in tetraethyl-lead, 1408.

Vickers, C. See Johnson, C. A., 3291. Vidro, G. I., Luft, B. D., and Matorin, Yu. V. Use of gas-discharge apparatus as light source for the pectrographic analysis of inert gases, 2002

Vielstich, W. Theory and application of the rotating-disc electrode 4595.

Vietti-Michelina, M. Chromatographic separation of thiourea and thiouracil, 602.

of thiourea and thiourach, 602.

— See also Pilleri, R., 5309.

Vigh, K. See Erdey, L., 2686.

Vigide, F. G. See Gómez Vigide, F.

Vigier, R. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.]

Determination of fluorine by the alizarin-zirconium complex in the presence of the phosphate ion, 2031

Vigler, M. S., and Conrad, A. L. Spectrographic determination of vanadium and iron in petroleum coke, 2827.

Vigvári, M. See Almássy, G., 1729. Vijayvargiya, R. See Bose, B. C., 2424. Vila, M. See Moreno, F., 1588. Viladkar, B. G. See Padhye, M. P., 5302. Vil'borg, S. S., and Drozdov, V. A. Complexometric determination of iodates, chromates and ferricvanides, 865.

Vilkas, M., and Abraham, N. A. Isomerisation in gas chromatography, 2814

Villanúa, L. See Carballido, A., 2972, and Valdehita, M. T., 2972.

Villela, G. G. See Bacila, M., 2916.
Vinaver, W. Automation in the field of analytical chemistry, 2591.

Vincent, M. C., and Blake, M. I. Analysis of barbi-turate salts in various dosage forms by an ionexchange and non-aqueous titration procedure,

Vincent, W. A. Colorimetric determination of amino-acid concentration, 4419.

Vining, L. C., and Taber, W. A. Estimation of ergot alkaloids in cultures of Claviceps purpurea, 2925. Vinnik, M. M. Separate determination of small

amounts of hydrofluoric, fluorosilicic and orthophosphoric acids when present together, 991.
- and Chepelevetskii, M. L. Determination of

fluorine by a fluorescence titration method, 989. Vinogradov, A. V. Determination of molybdenum

in molybdenum concentrates, 969.
- and Shpinel', V. S. Determination of zirconium in the presence of niobium and tantalum by the phosphate and 8-hydroxyquinoline methods, 2133.

Vinogradova, A. D. See Tananaev, I. V., 2092. Vinogradova, E. N., and Prokhorova, G. V. Polarographic determination of very small amounts by means of the stationary mercury electrode,

Vioque, E. Determination of salicylic acid in the presence of benzoic and other organic acids, 597

See also Gracián, J., 3516.
Virtanen, A. I. See Gmelin, R., 1863.
Vishveshwaraiah, K. N. See Vishweshwaraiah, K. N. Vishwanath, A. K. See Deshmukh, G. S., 3766.
Vishweshwaraiah, K. N., and Patel, C. C. Gravimetric estimation of lithium as trilithium phosphate, 872.

See also Patel, C. C., 4118.

Visintin, B., and Monteriolo, S. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956. Spectrophotometric determination of fluorine in water. I. Determination of small amounts of fluorine, 2031; II. Investigation of the alizarin - zirconium and aluminium - Eriochrome cyanine methods, 2031.

Vita, O. A., Trivisonno, C. F., and Phipps, C. W. Analysis of uranium solutions using exchange in nitrate media, 975.

Vitagliano, M. See Fabris, A., 2478. Vitali, T., and Finzi, A. M. C. Paper chromatography of indole compounds, 608

Vite, R. K. See Lott, P. F., 4737

Vithayathii, P. J., and Richards, F. M. Modification of the amino groups of the peptide component of subtilisin-modified ribonuclease. Determination of acetyl content in acetylated peptide, 5377.

Vitukhnovskaya, B. S. See Ryss, I. G., 512. Vitushkina, I. N. Spectrographic analysis of nickel, 2240.

See also Belokrinitskaya, E. E., 1373.

Vivonia, C. See Dubbs, C. A., 4978. Vizváry, E. See Podolský, V., 4019.

Vladimirov, L. V., and Shul'gina, M. N. Determination of sulphate sulphur in superphosphate, 962.

Vladimirova, V. M. See Cherkashina, T. V., 3165. Vladyrchik, O. S., Bespalova, L. L., and Kochergin, P. M. Determination of ethylbenzene in ethylnitrobenzene, 2303. Quantitative determination of ethyl-2: 4-dinitrobenzene in ethylnitrobenzene, 3341

Vlasák, R. Determination of benzene in the presence of its homologues in the atmosphere, 2491.

— See also Kratochvil, V., 3005.
Vlodavets, I. N. See Zhadnova, E. A., 267.
Vloed, A. V. D. Determination of radium in water, 5476.

Vobora, J. See Kysil, B., 3262, 3748. Vodar, B. See Romand, J., 1320. Voeks, J. F., and Crane, R. A. Recording and nonrecording dilatometers for highly viscous systems, 3025.

Vogel, A. I. See Kyte, V., 3092.

Vogel, J., Monnier, D., Haerdi, W., and Wenger, P. E. Macro- and micro-determination of traces of cobalt. IV. Separation by ion exchange: losses and contamination in the course of analytical operations; 3764

See also Haerdi, W., 2237, and Monnier, D.,

1019, 2736, 5254, 5372.

See Kortüm, G., 1994. See Hawkins, J. E., 4858. Vogel, Josef. Vogh, J. W.

Vogliotti, F. Use of thorium nitrate in the titration of fluorine after its separation from uranium by ion-exchange resins, 2715. Spectrophotometric determination of uranium, 4762

Vogt, K. F. See Labuschagne, J. H., 5017. Vogt. M. [Symposium on catecholamines.]

ning chromatograms of tissue extracts, 4938. Voicu, V., and Dema, I. Spectrophotometric determination of quadrivalent cerium with strychnidine, 2655. Extraction of palladium with organic

solvents. I. Use of the labelled-atom method for the extraction of palladium^{II} as reineckate, 2740.

Voigt, K. D. See Schmid, O. J., 1153.

Voigt. R. Determination of ergot alkaloids with p-dimethylaminobenzaldehyde, 245.

Voinovitch, I. A. Spectrochemical analysis of solutions by the spraying technique, 5100.

and **Debras-Guedon**, J. Analysis for iron in silicates with sulphosalicylic acid, 133. See also Debras-Guédon, J., 935, 2079, 5162, and

Louvrier, J., 2661. Voitsekhovskaya, I. A. See Belyakov, L. V., 5108. Voitsekhovskii, A. E., and Strashok, A. F. Potentiometric determination of potassium in aqueous solutions, 876

Vojta, Z. See Čůta, F., 4099.

Vojtěch, F. Automatic rapid combustion apparatus for elementary analysis, 5117.

— See also Večeřa, M., 3781.
Vokáč, V. See Novák, M., 4987.
Voláková, B. See Večeřa, M., 5286.

Volbert, F. See Kaufmann, H. P., 1935, 2483. Volcani, B. E. See Barker, H. A., 3941.

Volf, J., and Havránková, J. Polarographic determination of fluorides, 503.

See also Havránková, J., 771.

Vol'f, L. A. Use of Unithiol [sodium 2:3-dimercaptopropanesulphonate as a masking agent in the complexometric determination of calcium and magnesium, 3148. Use of Unithiol for volumetric determination of zinc, 4679.

Volkov, I. I. Determination of free sulphur by

reduction to hydrogen sulphide, 2701.

Volkova, L. P. See Pakhomova, K. S., 3245. Vollmers, M. See Krampitz, G., 4422. Volodina, I. N. See Ivanovskii, B. V., 1034.

Voluşniuc, M. See Vancea, M., 72, 1713. Volynets, M. P. See Ryabchikov, D. I., 3211.

Vom Ende, H. See Ende, H. vom. Von Baeckmann, A. See Baeckmann, A. von. Vonesch, E. E. See Guagnini, O. A., 1923.

Von Euler, U. S. See Euler, U. S. von. Von Lorch, L. See Lorch, L. von. Von Oër, A. See Oër, A. von.

Von Planta, C. See Planta, C. von. Von Studnitz, W. See Studnitz, W. von.

Von Sturm, F. See Sturm, F. von.

Voogt, P. Use of ion exchangers in detergent analysis. II, 2837. Vorel, F. See Prokeš, J., 1163.

Vorobjov. V. Bromatometric determination of the mean functionality of higher phenolic fractions, 1835.

Voshage, H., and Hintenberger, H. Isolation and mass-spectrometric determination of extremely small quantities of alkali, 2623.

Voskresenskaya, M. M. See Plaksin, I. N., 1073. Voss, W. See Lippert, E., 3069. Voth, J. L. Co-precipitation of sodium in sulphate

determination. Spectrographic method, 103. Vouk, V. B., and Weber, O. A. Extraction constant

of lead dithizonate, 3688.

See also Weber, O. A., 2031, 3687.

Vrátný, F. Infra-red spectra of metal nitrates, 19. Analysis of nitrates and oxides of nitrogen, 3700. and Fischer, R. B. Effect of absorbancy on

Raman intensities in solutions, 2565.

Vries, G. de, Hardonk, M. J., and Buschow, K. H. J. Paper-chromatographic determination of barium, calcium, strontium and magnesium, 3643.

Vries, M. de. See Mecke, R., 2979. Vromen, A. See Israel, Y., 1670.

Vahivtsev, A. D. See Lyast, I. Ts., 5315.

Vulterin, J., and Zýka, J. Hydrazine sulphate as volumetric reagent. VI. Determination of silver,

Vuylsteke, P. See Peeters, H., 822, 4064.
Vyakhirev, D. A., Ostasheva, M. I., and Reshetnikova,
L. E. Determination of liquid hydrocarbons by

gas chromatography, 1089.

Vydra, F., and Přibil, R. Utilisation of ternary and ion-association complexes in chemical analysis. Selective extraction and colorimetric determination of traces of iron as "ferroin iodide," 2731

Přibil, R., and **Körbl, J.** Complexometric titrations (chelatometry). XLII. Reactions of tions (chelatometry). Reactions of fluorescein complexones. Determination of copper and manganese, 2071. Direct complexometric determination of iron with xylenol orange as indicator, 2223.

 See also Přibil, R., 2668.
 Vyklický, M. See Túma, H., 1754.
 Výsotskil, R. Ya., and Livshits, E. G. Determination of lipoproteins in blood serum by means of paper electrophoresis, 681.

Waaler, T., and Paulssen, R. B. Volumetric determination of 3-(2-tolyloxy)propane-1:2-diol [mephenesin] and 3-(2-methoxyphenoxy)propane-1:2-diol [Resyl] with periodic acid, 1905.

aalkes, T. P. Determination of serotonin (5-

Waalkes, T. P. hydroxytryptamine) in human blood, 663.

Waber, J. T., and Wright, E. S. Determination of hydrogen in uranium, 492.

Wachi, F. M. See Juvet, R. S., 4199.
Wachsmuth, H., and Koeckhoven, L. van. Colour reactions of steroids, 3923. Colour reaction for caffeine, 5407.

Waddington, F. B. Versatile Karl Fischer titrimeter, 3093

Wadman, S. K. Spectrophotometric determination. of uric acid in serum and urine with the aid of uricase, 1487

Wadsworth, M. E. See Tensmeyer, L. G., 80. Waggoner, W. H. Potassium bromide disc Potassium bromide disc holder for Beckman DU spectrophotometer, 2564.

Wagman, G. H. See Pan, S. C., 1536. Wagner, C. D. See Guinn, V. P., 5522. Wagner, E. B. See Kelley, M. T., 4611.

Wagner, Heribert. Quantitative organic elementary micro-analysis, 1771. Wagner, Hildebert. See Hörhammer, L., 5361.

Wagner, J., and Franzen, E. Determination of nitrogenous components of urine in mixed excreta of poultry by means of paper chromatography and paper electrophoresis, 2391.

— See also Hynie, I., 4920.

Wagner, U. See Heller, K., 165.

Wagner, V. L., jun., and Yoe, J. H. Spectrophotometric determination of rhodium with thiomalic acid, and the simultaneous determination of rhodium and palladium, 1379. Spectrophotometric determination of palladium with thiomalic acid,

Wagner, W. See Buchanan, E. B., jun., 2031. Wagner, W. F. See Smith, W. T., jun., 5125. Wahba, N., El Asmar, M. F., and El-Sadr, M. M. Iodimetric determination of persulphates, Wahhab, S. M. A. See Flaschenträger, B., 4406.

Waite, R., and Gorrod, A. B. N. The structural carbohydrates of grasses, 1122. Comprehensive

wajchenberg, B. L. See Höxter, G., 3409.

Wakabayashi, T. See Imai, L., 2265.

Wakamasu, S. Determination of iron in metallic titanium with acridine, 436. Determination of zirconium in ferrozirconium with cupferron, 528. Spectrophotometric determination of sulphur and sulphate in pyrites, slag and sulphate compounds by the ferric sulphate complex method, 1719. Photometric determination of a small amount of iron in non-ferrous metals by the cupferron extraction method, 1746. Chemical analysis of basic slag. I. Determination of silica, total iron, alumina, manganese oxide, calcium oxide and magnesia, 2744; II. Determination of iron^{II}, iron^{III} and titanium, 2744; III. Determination of sulphur, 2744.

Walawalkar, M. B. See Anantanarayanan, K. G.,

2947.

Walberg, C. See Ware, A. G., 1525.
Waldi, D. Systematic analysis of alkaloids with the

aid of paper chromatography, 244. Waldmann, H. Qualitative micro-analysis and

chemical microscopy, 1638.

Waldrep, P. G. See Pinkus, A. G., 1219.
Waledziak, H., Gorczyńska, K., and Ciecierska-Stoklosa, D. Determination of trace amounts of vanadium by means of the colour reaction with benzohydroxamic acid, 4225.

See also Ciecierska-Stoklosa, D., 4226, and Gorczyńska, K., 4226.

Walerych, W. See Pawelkiewicz, J., 5463.
Walewska, Z. See Czakow, J., 495.
Walisch, W., and Ashworth, M. R. F. Automatic coulometric micro-determination of uncaturation with kinetic proof of real equivalence-point,

Walker, I. K., and Todd, H. J. Wavelength calibration of spectrophotometers, 2004.

Walker, J. B., and Walker, M. S. The enzymic reduction of hydroxyguanidine. Determination of hydroxyguanidine reductase, 1531.

Walker, J. M., Lambert, J. L., and Ellsworth, L. D. Use of an unbalanced bridge circuit in highfrequency titrimetry, 4614.

Walker, K. C. See Elliott, J. W., 4915. Walker, M. S. See Walker, J. B., 1531.

Wall, R. A. See Jones, J. K. N., 2274. Wallace, C. G. Determination of combined oxygen in beryllium metal, 386.

Wallace, G. W., and Mellon, M. G. Spectrophotometric determination of vanadium as tungstovanadic acid, 4224.

Wallace, W. C. See Laug, E. P., 1559. Walley, C. A. See Chalmers, R. A., 2031.

Wallhäuser, H. Determination of the resin content of phenolic resin mouldings, 199.

Wallraf, M. Universal apparatus for the rapid analysis of cement, 3576.

Walpurger, G. See Schmitz, H., 2789.

Walsh, A. See Box, G. F., 5102, Gatehouse, B. M., 5153, and Shelton, J. P., 2031.

Walsh, E., Wright, B. F., and Alexander, J. B.

Use of sucrose solution for the determination

walsh, J. T. See Merritt, C., jun., 3502, and Sullivan, J. H., 2783.
Walter, G. See Kaufmann, H. P., 2482.
Walter, P., Häusermann, M., and Nyari, E. Photometric determination of nicotine in tobacco and tobacco smoke, 705.

Wang, K.-T. Paper chromatography of phenols with polyamide-impregnated paper, 2305.

Wang, S.-C., Liu, S.-C., and Tsai, L.-W. Photo-

metric determination of silicon in urine and blood. 3870.

Wang, T.-T. See Huang, M.-C., 1887.

Wänninen, E. Complexometric titrations with diethylenetriaminepenta-acetic acid, 5134.

Wantuch, S. See Blaszkowicz, J., 2840.
Waravdekar, V. S., and Saslaw, L. D. Colorimetric estimation of 2-deoxy sugars with the use of the malonaldehyde - thiobarbituric acid reaction,

Ward, C. C. See Thompson, C. J., 4811.

Ward, G. M. See Evans, W. A., 800.

Ward, W. M. See White, J. U., 1212.

Wardecka, I. See Kalinowski, K., 1166.

Wardyńska, H. See Blitek, D., 3003.

Ware, A. G., Demetriou, J. A., Notrica, S., Searcy, R.,

Walber, C. and Cox F. Elimination of inter-

Walberg, C., and Cox, F. Elimination of inter-fering chromogens in the Zimmermann reaction for measuring 17-oxosteroids, 1525.

— See also Henry, R. J., 2366.

Warmuth, F. J. See Cheng, K. L., 2093, 3768.

Warren, G. W., Haskin, J. F., Kourey, R. E., and Yarborough, V. A. Gas-chromatography analysis of the reaction products from the hydroformyla-

tion of isobutene, 2264.

Lambdin, W. J., Haskin, J. F., and Yarborough, V. A. Gas-chromatographic analyses of products

from aldol condensations, 577.

Priestley, L. J., jun., Haskin, J. F., and Yarborough, V. A. Gas-chromatographic analysis of various mixtures of compounds containing chlorine, 568.

Warren, H. D., and Brunstad, A. Turbidimetric micro-determination of sulphate in plutonium solutions, 2187

Warren, K. S. See Nathan, D. G., 211.
Warren, L. Thiobarbituric acid assay of sialic acids, 1872. Thiobarbituric acid spray reagent for deoxy sugars and sialic acids, 4927.

Warren, R. J., Hazel, J. F., and McNabb, W. M. Ultra-violet spectrophotometric determination of small amounts of vanadium in ores and steel, 2170.

Wartburg, A. F. See Altshuller, A. P., 4214.
Wartman, W. B., jun., Cogbill, E. C., and Harlow,
E. S. Determination of particulate matter in concentrated aerosols. Application to analysis of cigarette smoke, 2425.

Washburn, W. H., Scheske, F. A., and Schenck, J. R. Infra-red determination of gibberellins, 1494.

Wasserman, L. R. See Baker, H., 1125.
Wasserk, Ş. See Lada, Z., 292.
Watabe, Y. See Honjo, T., 2743.
Watanabe, M. See Ishidate, M., 2371, and Momose, T., 4919.

Watanabe, N. Differential determination of bile acids in bile by paper chromatography. Separation of free and conjugated bile acids, 237; Quantitative micro-determination of bile

watanabe, T. See Parratt, L. G., 839.
Watanabe, Toshio. See Gotô, Hidehiro, 533.
Watanabe, W. See Rosenthal, I., 2991.
Watanuki, K. See Minami, E. 468, 960.
Waterbury, G. R. Modified Sargent - Malmstadt

automatic titrator for remote control use with plutonium solutions, 1226.

and Metz, C. F. Precise determination of plutonium by potentiometric titration, 986. Precise determination of Colorimetric determination of boron in zirconium hydride, 2087.

See also Van Kooten, E. H., 364.

Waterbury, W. E. See Macdonald, R. E., 2281.
Waterman, H. I. See Asselbergs, C. J., 5488.
Waters, J. L. See Mine Safety Appliances Co., 1983.
Waters, S. J. See Newton, A. S., 13. Waters, S. J. See Newton, A. S., 13.
Watkins, J. W. See Collins, A. G., 995.
Watkinson, J. H. Modification of Thorn and Shu's

method for organic carbon in soils, 3013. Determination of carbonate in soils, 3014. Vacuumdistillation method for determining carbonate in soils with ethylenediaminetetra-acetic acid, 3015.

— See also Jones, G. B., 1475. Watt, P. R., and Green, J. Multi-sheet frame for two-dimensional paper chromatography, 4049.

Watts, B. M. See Tarladgis, B. G., 3988.

Wawrzyczek, W. See Drabent, Z., 5165.

Wawzonek, S. [Review of fundamental develop-

ments in analysis.] Organic polarography, 5125.

Way, E. L. See Kaul, P. N., 3464.

Weatherford, R. L., and Larson, T. E. Preparation of suspended-solids samples for radioactivity

counting, 3097.

Webb, J. R. See Fennell, T. R. F. W., 2257. Webb, M. S. W. See Jury, R. V., 4398. Webb, R. J. See Jury, R. V., 4398. Webb, W. P. See Farley, L. L., 4089. Weber, C. W. Continuous gas titration analyser for

fluorine, 5067.

Weber, O. A., and Vouk, V. B. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Molecular extinction coefficients of dithizone and lead dithizonate in carbon tetrachloride, 2031; 3687.

— See also Youk, V. B., 3688.

Webster, H. L., and Halliday, J. Determination of alkylbenzenesulphonates in river water and

sewage, 1957. Webster, W. W., Nichols, C. W., and Chaikoff, I. L. Determination of 3β-hydroxysterols in serum and tissues by the anthrone reaction, 233.

Weclewska, M., and Popanda, G. Polarographic determination of germanium, 427. Weeks, L. E., Harris, J. C., and Lewis, J. T. Analysis

of fluorescent brighteners, 1450.

and Lewis, J. T. Analysis of surfactant mixtures,

Wegen, T. P. A. van der. Microchemical identifica-tion of some alkaloids, barbiturates, sulphonamides and new synthetic drugs. I, 2426; II, 2918; III, 3951; IV, 3462; V, 3642.

Wegmann, L. Nuclear induction spectrometer, 333

Wehle, H. Determination of isopropyl alcohol in presence of other alcohols, 2270.

Wehrli, A., and Kováts, E. Characterisation of organic compounds by gas chromatography. III. Calculation of retention indices for aliphatic, alicyclic and aromatic compounds, 2535.

Weichselbaum, T. E. See Hawker, C. D., 3888. Weidenhagen, R., and Schiweck, H. Paper-chro-matographic determination of raffinose in molasses, 3495.

Weidmann, G. Separation of nickel and cobalt by paper chromatography, 152. Separation of heavy metals by solvent extraction and by paper

chromatography, 4108.
and Drabner, J. Paper-chromatographic separa-

— and Dranner, J. Paper-chromatographic separa-tion of copper, silver and gold, 380.

— See also Musil, A., 3677.

Weigand, B. L. See Dannley, R. L., 1197.

Weigel, H. See Bourne, E. J., 1787.

Weigensberg, B. I., and McMillan, G. C. Ultraviolet spectrophotometric determination cholesterol, 687.

Weil-Malherbe, H. [Symposium on catecholamines.] Fluorimetric estimation of catechol compounds by the ethylenediamine condensation method. 4938.

Weimer, E. Q. See White, C. E., 5105. Weiner, R., and Boriss, P. Volumetric determination of tungsten and uranium, 973.

and Schiele, C. Ion-exchange separation of chromic acid: limits of resistance, 2195.

Weinmann, J. See Weinmann, S. H., 3452. Weinmann, S. H., and Jayle, M. F. Comparative determination of urinary hydroxylipids, and of the different types of urinary steroids, 1149.

Weinmann, J., Baulieu, E. E., Desgrez, P., and Jayle, M. F. Analytical study of steroids of the pregnanetriol group, 3452.

Weinstein, A. Anomalous calibration curves in gas chromatography, 3054. Analytical accuracy in gas chromatography using thermal-conductivity detectors, 4564.

Weise, C. H. See Copeland, L. E., 1769. Weiss, H. See Kreyenbuhl, A., 5297. Weiss, H. V., and Lai, M. G. Co-crystallisation of ultramicro quantities of alkaline-earth elements with potassium rhodizonate. Determination of radio-barium in sea water, 4677.

Weiss, P. J. Factors affecting the iodimetric assay of penicillin, 3473.

 See also Andrew, M. L., 707.
 Weiss, S. P. See Oertel, G. W., 238.
 Weissbach H., Smith, T. E., Daly, J. W., Witkop, B., and Udenfriend, S. Spectrophotometric assay of monoamine oxidase based on the rate of disappearance of kynuramine, 5390.

See also Barker, H. A., 3941.

Weissbecker, L. See Raptopoulo, R., 1152. Weissman, M., Klein, B., and Berkowitz, J. Clinical applications of infra-red spectroscopy. Analysis of renal tract calculi, 1481.

Weisz, H. [International Symposium on Microchemistry. Birmingham, 1958.] Developments in the use of the ring oven, 3102.

Weith, L. Evaluation of the diastatic activity of brewing malts, 2980.

Welch, G. A. See Dalton, J. C., 2031.
Welcher, F. J. [International Symposium on Microchemistry. Birmingham, 1968.] Specific

and selective organic reagents, 3102.

Welford, G. A., and Sutton, D. Determination of the uranium content of the N.B.S. iron and steel

chemical standards, 1371.

Weller, H. Determination of de-esterified fatty acids in blood serum with special reference to the hydroxamic acid method, 4937.

Wempe, E. See Diller, W., 1906. Wender, S. H. See Dunlap, W. J., 5357. Wendlandt, H.-G. See Gattow, G., 4777.

Wendlandt, W. W., and Bear, J. L. Characterisation and identification of the rare-earth-chloride hydrates by differential thermal analysis, 3174.

Wenger, E. See Brieskorn, C.-H., 3847.

Wenger, F., and Kutschke, K. O. Separation and micro-determination of formaldehyde and methanol in an excess of azo-alkanes, methylal and lower esters, 2277.

Wenger, P. E. See Haerdi, W., 2237, Monnier, D., 1019, 2736, 5254, 5372, and Vogel, J., 3764.
Wenner, V. R. Rapid determination of minerals

and ions in milk. II. Determination of chloride,

Wentworth, W. E. See Keirs, R. J., 2031.

Werber, O. See Pardun, H., 2995. Werbin, H., Chaikoff, I. L., and Imada, M. R. Sensitive method for determining 3H-water in body fluids by liquid scintillation spectrometry,

Werner, H. Determination of boron in sedimentary rocks, 1298.

Werner, O. Quantitative spectrochemical analysis of refined zinc, 45.

Werum, L. N., Gordon, H. T., and Thornburg, W. Paper ionophoresis using organic buffers in water - formamide and water - urea, 4570.

Wesselman, H. J. Quantitative determination of ethanol in pharmaceutical products by gas chromatography, 5422.

West, A. R. See Thornton, E., 3593.

West, D. B., and Lautenbach, A. F. Chlorides in

beer by ion exchange, 2984.

West, D. L. [Second Conference-Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Determination of deuterium, oxygen and nitrogen in helium by gas chromatography, 335; 2617.

West, P. W. [International Symposium on Microchemistry. Birmingham, 1958. Practical applications of chemical microscopy, 3102. Review of fundamental developments in analysis.] Inorganic microchemistry, 5125.

West, T. S. Complexometric titration of highly coloured ions, 2604. [International Symposium on Microchemistry. Birmingham, 1958.] New reagents in complexometric analysis, 3102.

See also Ayers, C. W., 1398, Belcher, R., 1402, 2287, 3287, 5144, and Hoyle, W., 1800.

West, W. W. Chromatographic separation and

ultra-violet analysis of polyphenyls, 4842. Westenberg, L. Increasing the rate of elution in

chromatographic columns, 1989.

Westhuyzen, J. P. van der. Ashing technique for the determination of lead in wines and spirits, 1932. Westinghouse Electric Corp. Devices for measuring

the hydrogen content of liquids, 4552. Westland, A. D., and Westland, L. Determination

of platinum with benzyldimethylphenylammonium chloride, 4293.

Westland, L. See Westland, A. D., 4293.
 Westley, J., and Lambeth, J. Protein determination on the basis of copper-binding capacity, 4955.

Wet, C. R. de. See Basson, R. A., 3051.
Wet, J. F. de. See Van Niekerk, J. N., 5136.
Wet, W. J. de, and Pretorius, V. Factors affecting the use of gas - liquid chromatography for the separation of large samples. Sample-inlet system, distribution coefficient of solute, and amount of liquid in stationary phase, 4561.

Weurman, C., and Dhont, J. H. Unexpected formation of volatile compounds on gas-liquid chromatography columns, 3557.

Weyers, J. Colorimetric determination of metals by means of Reinecke salt. I. Determination of mercury, 4685. Colorimetric determination of mercury in pharmaceutical preparations, 5007.

Weymar, C. See Silbereisen, K., 2988.

Weźranowski, E. See Czakow, J., 896.

Whalley, C. [International Symposium on Micro-Birmingham, 1958. Problems in chemistry. industrial inorganic analysis, 3102

Wharton, F. D., jun., Olcott, I., Classen, L. J., Apple, R. E., and Fritz, J. C. Anorganic bone as a measure of calcification in the A.O.A.C. vitamin-D assay, 1945.

Wheeler, P. See Michaels, G. D., 2407.
Wheeler, V. J. See Kennedy, J., 390.
Wheelock, T. D. See Bethea, R. M., 2778.
Whisman, M. L., Eccleston, B. H., and Armstrong, F. E. Liquid scintillation counting of tritiated organic compounds, 4802.

Whitcomb, S. E. See Winter, W. K., 3826.

White, C. E. [Review of fundamental developments in analysis.] Fluorimetric analysis, 5125.

and Cuttitta, F. Fluorimetric study of the magnesium - NN'-di(salicylidene)ethylenediamine system, 3146.

Ho, M., and Weimer, E. Q. Methods for obtaining correction factors for fluorescence spectra as determined with the Aminco - Bowman spectrophotofluorimeter, 5105.

See also Cuttitta, F., 3147.

White, C. G. See Helf, S., 4620. White, D. See Hughes, M. A., 3329. White, D. C. Micro-determination of sulphate with lead nitrate as titrant and dithizone as indicator.

White, H. B., jun., and Quackenbush, F. W. Analysis by alkali isomerisation, 3517.

White, H. F. See Lovell, C. M., 2563.
White, I. G. Estimation of glycol, fructose and lactic acid, with particular reference to semen,

White. J. C. Use of tri-n-octylphosphine oxide in

analytical chemistry, 3110; 4643.

and Apple, R. F. [Second Conference-Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, Spectrophotometric determination of 1958.] cerium in fluoride salts, 335.

— See also Goldberg, G., 4770, Ross, W. J., 2681, 4152, and Young, J. P., 3080.

White, J. U., Alpert, N. L., Ward, W. M., and Gallaway, W. S. Micro gas cell for infra-red spectroscopy, 1212.

White, L. M., and Secor, G. E. Microscopic identification of microgram quantities of galacturonic acid and glucuronolactone. Direct synthesis of hydrazone derivatives by the solvent diffusion technique, 1121.

Whitehead, J. K., and Beale, D. Determination of thyroxine levels in human plasma by double

isotope-dilution technique, 1507.

Whitehead, T. H. [Second Conference—Analytical Chemistry in Nuclear Reactor Technology. Part I. Specific applications of diverse methods of chemical analysis. Gatlinburg, Sept. 29 to Oct. 1, 1958.] Analytical applications of ethylenediaminetetra-acetic acid and its salts, 335. Tri(hydroxymethyl)methylamine as a titrimetric standard, 1244.

Standard, 1244.
Whitnack, G. C. See Ayres, W. M., 4887.
Whitney, R. McL. See Graham, H. D., 2328.
Whittem, R. N. See Nobbs, J. M., 4667.
Whyman, B. H. F. See Desty, D. H., 2537, 4563.

Wiarda, K. S., Hyman, A. J., and Kassenaar, A. A. H. Application of density-gradient electrophoresis to the separation of serum proteins, 5378

Wiberley, S. E., Bunce, S. C., and Bauer, W. H. Carbon - hydrogen stretching frequencies, 4349.

Wickberg, B. See Hammarberg, G., 5280. Wickbold, R. Enrichment of very small amounts of silica by ion exchange, 2662.

and Nagel, F. Determination of boron, 1687.
 Wiecheé, L., and Hetnarska, K. Chromatographic analysis of technical 1-naphthylacetic acid, 3541.

Wiedenhof, N. Analysis of plant waxes by means of chromatography and X-ray diffraction, 1853. Wiederkehr, V. R., and Goward, G. W. Separation of boron from alloys and other materials by

pyrohydrolysis, 3154

— See also Goward, G. W., 3212.

Wiedermann, L. H. See Hansen, P. V., 1565.

Wiedmann, H. Determination of tin, copper, lead, iron and nickel in brass and bronze, 351.

Wiel, S. See Farlow, N., 5063.

Wiesner, L. Radiometric absorption analysis. I. Elementary analysis with a methane-flow tube counter as radiation detector, 2746.

Wiggers, B. G. See Maurice, M. J., 1234. Wiggs, S. M. See Sammons, H. G., 3867. Wijk, H. F. van. See Smit, W. M., 3611. Wild, F. E. Determination of tellurium in bismuth

metal, 477

Wilham, C. A. See Shaefer, W. C., 2963. Wilhide, W. D. See Brabson, J. A., 1964. Wilkie, J. B., Jones, S. W., and Morris, W. W., jun.

Partition column for vitamin-A chromatography, 1581.

Wilkins, D. H. Chelatometric determination of chromium, cobalt^{III} and copper with a metalfluorechromic indicator, 21. Separation and determination of nickel, chromium, cobalt, iron, titanium, tungsten, molybdenum, niobium and tantalum in a high-temperature alloy by anion exchange, 2056. Calcein blue—a new metalfluorechromic indicator for chelatometric titrations, 5131.

and Hibbs, L. E. Determination of copper with triethylenetetramine using a metalfluorechromic

indicator, 1268

and Hibbs, L. E., jun. Determination of cobalt, iron and vanadium or manganese in soft magnetic alloys, 541.

— See also Hibbs, L. E., 136.

Wilkinson, N. T. See Russell, F. R., 3533.

Wilkinson, R. H. Capillary pH electrode, 3089.

Willard, H. H., Mosen, A. W., and Gardner, R. D.

Determination of thorium in the presence of uranium, titanium and tungsten, 448.

Willcock, H. G. Analysis of tar acids. I, 595; II. Spectroscopic and chromatographic methods,

505

Willeford, B. R., jun. See Kolthoff, I. M., 3913. Willemart, R., and Ferdet, J. Spectrophotometric determination of cholic acid in deoxycholic acid,

Williams, A. E. See Beynon, J. H., 2317.
Williams, A. F., and Brooks, J. [International Symposium on Microchemistry. Birmingham, 1958. Determination of nitrates by "dead-stop" titrimetry, 3102.

and Kenyon, D. Polarographic determination of nitroglycerin, 3855.

- and Park, T. O. Method for obtaining weighed micro samples of moisture- or oxygen-sensitive compounds, 4093.

Williams, A. I. Determination of tin in iron and alloy steels, 1010.

Williams, C. H. Use of lanthanum chloride to prevent interferences in the flame-photometric determination of exchangeable calcium in soils,

Williams, H. Investigation into the action of bases on chloroform, 1409.

Williams, H. P. See Riley, J. P., 163, 2247. Williams, J. P., Campbell, D. E., and Magliocca, T. S. Determination of boric oxide in glass by pyrohydrolysis separation, 1688.

See also Adams, P. B., 1192.

Williams, K. T. See Potter, E. F., 1910. Williams, L. A., Linn, R. A., and Zak, B. Differential ultra-violet spectrophotometric determination of serum salicylates, 208.

— See also Itano, M., 2360, and Zak, B., 2400, 3915.
Williams, M. A. See Goldbaum, L. R., 3873.
Williams, M. B. See Pease, B. F., 2

Williams, P. P. Direct quantitative diffractometric analysis, 3081.

Williams, R. L. See Bellamy, L. J., 3102.
Williamson, A. G. See Scott, B. A., 820.
Williamson, R. S., and Fankuchen, I. Doublecrystal X-ray monochromator-collimator, 3570.

Williamson, W. T. H. Soil-crushing machine, 2512.
Willingham, C. B. See Kennedy, J. V., 3082.
Willis, H. A. See Miller, R. G. J., 3102.
Willis, J. B. Determination of magnesium in blood serum by atomic absorption spectroscopy, 1470. Determination of metals in blood serum by atomic absorption spectroscopy. I. Calcium, 4900; II. Magnesium, 4900; III. Sodium and potassium, 5342.

See also Ham, N. S., 4833, 4852.

Willis, V. Analysis by gas chromatography of a "pure" sample with an "impure" carrier, 812.

Willman-Johnson, B. See Björling, C. O., 718.
Willmer, T.-K., and Liedtke, W. Experience with direct-recording spectrographs in the steel-works

laboratory, 4274.

filloex. R. Determination of iron in plasma, 1115. Willocx, R. Wilson, A. D. See Jeffery, P. G., 2719,

Wilson, A. L. Determination of organic matter in water by oxidation with potassium permanganate, 3007. Determination of fulvic acids in water, 3008.

Wilson, B. B. See Burd, R. M., 939.
Wilson, C. L. See Forsythe, J. H. W., 4289.
Given, T., 3612. Jasim, F., 4776. Magee, R. J., 2222. and Thompson, J. K., 2031.

Wilson, C. M. Quantitative determination of sugars on paper chromatograms, 1120.

Wilson, C. O., jun., and Shapiro, I. Identification of fragments in the mass spectra of dialkyldiboranes, 3812.

Wilson, David Woodburn. See Ross, S. D., 4079,

Wilson, D. Wright. See Stambaugh, R. L., 4969. Wilson, H. R. See Smith, D. L., 2147. Wilson, I. R. See Plowman, R. A., 4699.

Wilson, J. B. Determination of safrole and methyl salicylate in soft drinks, 2977.

Wilson, J. R. See Potter, E. F., 1910.
Wilson, R. F., Baye, L. J., and James, J. Amperometric determination of palladium with with

2-(o-hydroxyphenyl)benzoxazole, 2741. Wilson, R. M. See Barker, H. A., 3941. Wilson, W. J. Detection of preservatives in wood

with catechol violet, 1833. Determination of arsenic in treated wood, 4030.

Winczakiewicz, A. See Piela, W., 198.

Winefordner, J. D. See Malmstadt, H. V., 1114, 1953, 4369

Winslow, E. H. See Liebhafsky, H. A., 5125.

Winter, D. H. See Rowell, K. M., 3421. Winter, W. K., Curnutte, B., jun., and Whitcomb, The infra-red spectrum and structure of crystalline ferrocene, 3826.

Winteringham, F. P. W. [International Symposium on Microchemistry. Birmingham, 1958.] Radioisotopes in microbiological research, 3102.

Winters, J. C. See Martin, R. L., 3356.
Wirth, C.-M. P. Determination of acetylsalicylic acid, phenacetin and caffeine in tablets, 1898. Wirtz, H., and Rothmann, H. Determination of

tantalum and niobium in ores and ferro-alloys, 950. Wise, C. S., Mehltretter, C. L., and Van Cleve, J. W.

Colorimetric determination of glyoxal, 1066. Wise, W. M. Titrimetric determination of hydrogen present as water and/or hydrogen fluoride in uranium tetrafluoride and magnesium fluoride, 127.

Wiseman, H. G., Mallack, J. C., and Jacobson, W. C. Determination of sugar in silages and forages,

Wiseman, W. A. Effect of carrier gas on katharometer response, 819. Separation factors in gas chromatography, 5088.

Wish, L. Quantitative radiochemical analysis by ion exchange. IV. Uranium and tellurium, 485; Calcium, strontium and barium, 1284.

Withock, R. F. See Fagel, J. E., 15.
Witkop, B. See Weissbach, H., 5390.
Witkowski, H. Cationite paper. IV. Quantitative determination of total potassium-group and calcium-group metals in glass, 368.

Witmer, F. J., Thomas, D. N., and Vernetti, J. B.
Analysis of isooctyl esters of 2:4-dichlorophenoxyacetic acid and 2:4:5-trichlorophenoxy-

acetic acid mixtures, 598. Wittry, D. B. Resolution of electron probe micro-

analysers, 330. Wodkiewicz, L. Separation of uranium from accompanying metals by the carbonate method,

 See also Minczewski, J., 16.
 Wodsak, W. Detection of antibiotics in milk, 3987. Chemical determination of vitamin A and carotene, 5454.

Woggon, H. Quantitative determination of ascorbic acid in vegetable extracts with special reference to polarography, 278. Polarographic methods and their application to food analysis, 5424.

- and Rauscher, K. Quantitative oscillographic determination of vanillin and bourbonal [3ethoxy-4-hydroxybenzaldehyde] in vanilla-sugar, and in pudding- and sauce-mixes, 3989.

Wöhlert, W., and Freimuth, U. Determination of

inulin in chicory root, 2976.

Woidich, H., and Langer, T. Detection of adulteration in black-currant juice, 2459.

See also Woidich, K., 181.

Woldich, K., Langer, T., and Schmid, L. Paper chromatography of water-soluble synthetic dyes,

- Schmid, L., Langer, T., Gnauer, H., and Woidich, H. Quantitative determination of bromoacetic acid and its derivatives, 181.

Woiwod, A. J. Preservation of paper chromato-

grams sprayed with ninhydrin, 5082.

Woldbye, F. Optical rotatory dispersion. I. A recording spectropolarimeter based on the Cary 11MS-50 spectrophotometer, 3575.

Wolf, F. Oxidative determination of the 4335. Urea adducts from civet and other volatile Applytical and preparative method, 4876.

Wolf, S. The Potentiograph E336, a recording automatic titration apparatus, 2020. Titrimetric determination of morphine, 3946.

Wolfarth, E. F. See Bentley, F. F., 567.
Wolfe, A. L. See Gordon, C. F., 5521.
Wolfe, S. W. See Holmes, R., 5381.
Wolfe, E. See Lassner, E., 4748.
Wolff, J. P. Spectrophotometry in the fat industry,

Wolffgang, H., and Seiler, R. Simple chromato-graphic fraction collector, 1990.

Wolfgang, R., and Mackay, C. F. Proportional counters for gases and vapours, 1228.

counters for gases and vapours, 1228.

Wolfman, M. See Rosenblum, R., 1503.

Wolfram, L. See Turska, E., 625.

Wolfram, W. E. See Flaschka, H. A., 2164.

Wolin, A. G. See Silverman, G. J., 1918.

Woliński, J., Buza, D., Czerwińska-Fejgin, E., and Zamłyński, W. Identification of amines and phenols, 4356.

Wollish, E. G. See Sankowski, R. Z. 1774.

Wollish, E. G. See Senkowski, B. Z., 1774. Wollmann, C. See Pohloudek-Fabini, R., 2374. Wollmann, H. See Pohloudek-Fabini, R., 2374. Wollweber, G., and Fehle, R. Experience with direct-recording spectrographs in the steel-works laboratory. IX, 4274.

Wolszon, J. D. See Callicoat, D. L., 1294,

1295.

Wolter, H. See Bausch, H., 3999.
Wong, C.-M. See Chen, Y.-M., 2156.
Wong, F. F. See Carson, J. F., 613.
Wood, A. J. See Smales, A. A., 2031.
Wood, D. F., and Nicholls, H. A. Polarographic

determination of trace amounts of lead in zirconium and its alloys, 4207.

and Oliver, J. A. Determination of oxygen in titanium - manganese alloys, 952.

and Scholes, I. R. Determination of niobium and tantalum in binary alloys and zirconium alloys,

and Turner, M. Determination of traces of rare-earth metals in zirconium and its alloys, 3194.

Wood, G. See Malli, J., 1231.
Wood, J. C. S. See Allen, J. G., 836.
Wood, K. I. Convenient pH-stat assembly, 5517.

Madorsky, L. and Paulson, R. A. Determination of copolymer composition by combustion analysis for carbon and hydrogen, 4387.

Wood, R. Determination of hexachlorocyclohexane residues in foodstuffs, 3993.

— See also Sergeant, G. A., 1171. Woodford, F. P. See Böttcher, C. J. F., 2380. Woodford, M. H., jun. See Chiccarelli, F. S.,

Woodin, A. M. Fractionation of a leucocidin from Staphylococcus aureus. Determination of leucocidin, 2887.

Woodruff, C. W. Micro-method for serum-iron determination, 3399.

Woods, K. R. See Pert, J. H., 4071. Wooll, A. A. Recovery of rhenium and the analysis of its alloys, 3248.

See also Cotton, T. M., 4134.

Woolf, L. I. Improved resolution on paper chromatograms, 1604.

Workman, W. See Calvert, S., 5484.
Woźniak, W. See Myszkowska, K., 1181.
Wrangell, L. J. See Nelson, V. A., 3769.
Wright, B. F. See Walsh, E., 3149.
Wright, H. B. See Thoma, J. A., 3410.

Wright, J. R., Hoffman, I., and Schnitzer, M. Application of thermogravimetry to the analysis of carbonates in soils. I. Analysis of pure carbonates and naturally occurring limestones,

— See also Hoffman, I., 5046.
Wright, N. See Stewart, R. D., 3858.
Wright, W. W. See Loy, H. W., 699.
Wroński, M. Volumetric determination of bivalent

mercury in the presence of thiofluorescein as indicator, 2086. Independent titration of cyanide and sulphide, 2658. Mercurimetric determination of allyl alcohol, 3304. Determination of hydrolysable sulphur in organic compounds, 3792. Mercurimetric titration of thiourea and its derivatives in the presence of p-dimethylaminobenzylidinerhodanine as indicator, 4831. Determination of small amounts of silver and mercury with thiofluorescein, 5155. Mercurimetric determination of thiophen, 5311.

Wrzesińska, E. Determination of nitrides of aluminium, silicon, vanadium and chromium in

carbon-steel and low-alloy steel, 1008. Wu, C. Determination of guanidino-acetic acid and

arginine in biological fluids, 3911. Wu, T.-F. See Huang, M.-C., 1887

Wunderlich, E., and Göhring, E. Volumetric determination of germanium as catechol-ger-

manic acid, 2121. Wunderly, C. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Spectrophotometric determination of single components in mixtures of pyrazole and salicyl derivatives, 2031.

Wurn, M. See Straus, R., 5382.
Wurst, M. See Franc, J., 4857, 4890.
Wurziger, J., and Chandra, U. Detection of butylated hydroxyanisole in fats, 3513.

Wyatt, R. See Drotschmann, C., 5205.
Wyckoff, R. W. See Mosley, V. M., 315.
Wynder, E. L. See Hoffman, D., 4348.
Wyngaarden, J. B., and Ashton, D. M. Regulation

of activity of phosphoribosyl pyrophosphate amidotransferase by purine nucleotides: potential feedback control of purine biosynthesis. Enzyme assay, 1534.

Wynn, J., Fabrikant, I., and Deiss, W. P. Extraction and chromatographic separation of plasma

iodoamino acids, 3435.

Wynne, E. A. See Fine, L., 3240. Wyss, E. See Barbier, M., 2410.

x

Xuong, N. D. See Buu-Hoi, N. P., 2031.

Yajima, S. See Nakai, T., 442, 1694.

Yakimets, E. M. See Bashkirtseva, A. A., 1001,

Yakovenko, Ya. G. See Zhdanov, A. K., 1020. Yakovlev, B. M. See Bÿkova, T. V., 1390. Yakovlev, P. Ya., Razumova, G. P., and Malinina,

R. D. Polarographic determination of impurities in nickel-based alloys by co-precipitation with methyl violet, 2243.

Yallop, H. J. Staining of cast high explosives for observation of the crystalline structure, 5338.

Yalman, R. G., Bruegemann, W., Baker, P. T., and Garn, S. M. Volumetric determination of calcium in presence of phosphate, 894.

Yamada, H. See Ishibashi, Masayoshi, 3113.
Yamada, S. Studies on inorganic paper chromatography.
VI. The separation mechanism of cations with butanol - hydrochloric acid as developer, 2528. Studies on retention analysis for the determination of substances separated by paper chromatography. I. Determination of nickel, 4288; II. Determination of copper, 4288.

Yamagata, N., and Yamagata, T. Rapid radio-chemical determination of caesium-137, 5148.

Yamagata, T. See Yamagata, N., 5148. Yamaguchi, K., Tabata, T., and Shōji, H. Determination of alkaloids from Ranwolfia serpentina. VII. Fluorimetric determination of reserpine on

filter-paper. (2), 3467. Yamaguchi, S., and Hori, T. Quantitative determination of ferromagnetic impurities in austenitic steel by means of electron diffraction, 140.

Yamamoto, K. Oscillopolarographic determination of zinc in plant ash, 1681. Analytical chemistry of trace elements and mineral constituents in biological materials. XIX. Utilisation of rubeanic acid [dithio-oxamide] in the determination of copper in plant ash by polarography, 5352; XX. Oscillopolarographic determination of zinc and copper in plant ash, 5352.

See also Hashitani, H., 2498.

Yamamoto, S. See Tamamushi, R., 840. Yamamoto, Tamechika, and Saito, K. Gas-chromatographic analysis of crude methanol and higher alcohols, 2268.

Yamamoto, Toshio. See Ishibashi, Masayoshi, 1266. Yamamoto, Yoshiziro. See Musha, S., 4186. Yamamoto, Yuroku. Ultra-violet spectrophoto-

metric determination of bismuth with hydrobromic acid, 2166. Ultra-violet spectrophotometric determination of bismuth with perchloric Ultra-violet spectrophotometric acid. 3706. determination of lead in hydrobromic acid. 4193. Ultra-violet spectrophotometric determination of bismuth with sulphuric acid, 4223.

See also Ishibashi, Masayoshi, 74, 99, 3113. Yamamura, S. S., Rein, J. E., and Booman, G. L. Amperometric determination of tin with cupferron, 2666.

Yamasaki, Kazuo. See Yasuda, M., 2031.

Yamasaki, Kenichiro, and Ito, R. o-Di. dioximes and their metal complexes. o-Diketone Photometric determination of the cyanide ion with furil α-dioxime in the presence of nickel, 920.

Yamashina, H. See Kakemi, K., 3485. Yamashita, K. See Matsunaga, A., 4035, and Sera, K., 4034.

Yanagihara, T., Matano, N., and Kawase, A. 2-(2-Hydroxy-5-methoxyphenylazo)-4-methylthiazole as an analytical reagent. III. Determination of zinc, 46; IV. Determination of nickel and cobalt, 46. Determination of traces

of lead in high-purity metals, 4195. Yanagisawa, S., and Hashimoto, Y. Spectrographic determination of magnesium with a "pumping"

electrode, 4139.

Yang, H.-C. See Yu, C.-C., 4347.
Yang, K. See Gant, P. L., 1257.
Yankov, H. F. Gravimetric tetraphenylboron method for potassium in glass and silicates, 877.

Yano, H. See Momose, T., 1814. Yanovskii, M. I. See Oziraner, S. N., 1998. Yao, T. C., and Porsche, F. W. Determination of sulphur and chlorine in petroleum liquids by X-ray fluorescence, 3360.

Yarborough, V. A. See Kourey, R. E., 2777, and Warren, G. W., 568, 577, 2264. Yarbro, C. L. See McAllister, H. C., jun., 3864.

Yashchenko, M. L., Ovchinnikov, G. V., and Afanas'-eva, L. I. Determination of alkali metals, 871.

and Varshavskaya, E. S. Determination of potassium in mica by the perchlorate method,

Yashphe, J., Halpern, Y. S., and Grossowicz, N. Quantitative differential determination of hydroxylamine and β -aspartyl hydroxamate in mixtures, 4947.

Yasuda, H. See Uno, T., 2945. Yasuda, M., Suzuki, K., and Yamasaki, Kazuo. [Fifteenth International Congress of Pure and Applied Chemistry. Lisbon, 1956.] Stability of copper and nickel chelates of some phthalic acid derivatives, 2031.

Yasumori, Y. Square-wave polarograph, 2017. Yates, M. L. See Fischer, R. B., 1196. Yatsenko, V. I. See Lazebnik, D. D., 431. Yatzidis, H. Measurement of transaminases in

serum, 5395.

Yeddanapalli, L. M., Kuriakose, A. K., and Gopala-krishna, V. V. Three-component solvent system for quantitative separation of phenol - formaldehyde reaction products by ascending paper chromatography, 5325.

Yee, J. Y. See Clark, K. G., 1961, and Hill, W. L., 1965.

Yeh, M. K. Y. See Beutler, E., 1492. Yeh, Y.-H. See Chang, H.-Y., 2101. Yen, I.-I. See Lu, M.-L., 4221. Yen, J.-Y., and Liu, Y.-S. Phase analysis of complex

copper ores, 2627.

Yeoman, W. B. Study of paper protein electro-

phoresis with special reference to a method of sub-fractionation, 1208. Factors affecting albumin trailing during electrophoresis, 4068. Albumin - globulin ratio in serum. Comparison of salt fractionation and protein paper electrophoresis, 4960. Examination of scanning instruments used in electrophoresis, 5498.

Yerick, R. E. See Banks, C. V., 10. Yoda, A. Micro-determination of phosphoric acid

by solvent extraction, 2358.

Yoe, J. H. See Jacobs, W. D., 150, 543, 1378, Katsube, Y., 4215, Paixao, L. M., 1108, and Wagner, V. L., jun., 1379, 1382.
Yokoo, M. Applications of nitrometry. XVII. Determination of glucosamine, 661; XVIII.

Determination of pyridine and its derivatives,

Yokoyama, Y. Spectrographic analysis of ferro-alloys. II. Determination of lead, copper and zinc in ferromanganese, 4270.

Yorga, N. See Cernâtescu, R., 2031. Yoshida, Hiroyuki. See Suzuki, N., 1762. Yoshida, Hitoshi. See Hikime, S., 3721.

Yoshida, S., and Asai, M. Infra-red spectra of pyrazine- and pyridine-carboxylic acids and their derivatives, 191.

Yoshihiro, Y., and Nakamura, Matao. Colorimetric determination of 5-hydroxymethyl-2-furaldehyde in coloured glucose syrup, 609.

Yoshimori, H. See Matsunaga, A., 4035, and Sera, K., 4034.

Sera, K., 4034.
Yoshimura, S. See Sato, Koichi, 2333.
Yoshinaga, M. See Momose, T., 651.
Yoshino, M. See Imai, I., 2265.
Yoshino, Y. See Iguchi, A., 586.
Younathan, M. T. See Tarladgis, B. G., 3988.
Young, E. M. See Sorof, S., 4957.
Young, J. G., Porush, I., Thiel, C. G., Cohen, S., and Stimmel, C. H. Pressurised pharmaceutical aerosols for inhalation therapy. II. Analytical control methods, 4469. control methods, 4469.

Young, J. G. See also Porush, I., 4469. Young, J. P., and White, J. C. High-temperature cell assembly for spectrophotometric studies of molten fluoride salts, 3080.

Young, R. S. Metallographic differentiation of cobalt metal, oxide and sulphide, 147.

Youngdahl, C. A., and DeBoer, F. E. Analysis for magnesium in high-purity aluminium, 1303.

Youngs, C. G. Analysis of mixtures of amino acids

by gas-phase chromatography, 671. Yu, C.-C., Yang, H.-C., Su, F.-C., Hsien, C.-C., and Liu, C.-H. Gas - liquid chromatographic separation and identification of methylchlorosilanes,

Yü, H.-Y., and Tao, T. Rapid determination of p-dimethylaminoacetophenone by direct titration.

2310.

Yuasa, T. Colorimetric determination of phosphorus, arsenic, silicon and germanium with molybdate. I. Colorimetric determination of germanium by the molybdogermanate method. 1312; II. Colour reaction of molybdate with reducing agent, 1312.

Yudelevich, I. G., Shelpakova, I. R., Sosnovskaya, T. I., and Bortnik, L. S. Spectrographic control of

rare-metals production, 2057.

See Also Naimark, L. E., 866.
Yudina, I. N. See Fridman, I. D., 2697.
Yuhi, K. See Tsukamoto, T., 585.
Yunina, V. I. See Korenman, I. M., 945.
Yurist, I. M. Complexometric determination of

copper and manganese when present together, 1669. Complexometric determination of nickel and magnesium in nickel-plating electrolytes,

Zaborenko, K. B., and Filippova, N. V. Determina-tion of absolute quantities of thorium-230, 5204. Zabrodina, A. S., and Khlystova, A. P. Microdetermination of selenium in organic compounds containing chlorine, bromine or sulphur, 4317.

Zabrodina, K. S. See Klimova, V. A., 551, 1777. Zachariasen, H., and Beamish, F. E. Isolation of platinum metals from partially refined concen-

trates, 4792.

Zagórski, Z., and Cyrankowska, M. Application of extraction and polarographic methods. I. Determination of copper and lead in ferro-cadmium alloys, 28.

and Krawezyk, W. Micro- and macro-deter-

mination of perchlorates, 129. See also Janko, A., 12.

Zagorski, Z. P., and Cyrankowska, M. An EDTA polarographic determination of tellurium in lead alloys, 2192. Determination of tellurium in the presence of antimony in alloy amounts, using EDTA, 2193.

Zahn, C. See Langer, S. H., 4350. Zahn, H. See Spoor, H., 1099.

Zahnd, H., and Citron, M. Automatic fraction collector, 5074.

Zahner, R. J. See Milner, O. I., 4213.
 Zahradnik, R. Ultra-violet spectra of compounds containing C=S groups, 2819.

Zaidel', A. N., Lipis, L. V., and Petrov, K. I. Spectrographic analysis by evaporation. VIII. Analysis of zirconium, 2132.

and Ostrovskaya, G. V. Spectral determination of low concentrations of deuterium in hydrogen. 869.

Petrov, A. A., and Petrov, K. I. Spectrographic determination of hydrogen in metals by isotope equilibration, 2615.

Zaikov, G. E. Separation of lower aliphatic alcohols by paper chromatography and their quantitative determination, 4323.

Zaîkovskii, F. V. Complexometric and photometric determination of thorium in minerals and ores,

Zaitseva, V. A. See Kochergina, T. Ya., 2669. Zak, B., Eggers, E. M., Jarkowski, T. L., and Williams, L. A. Electrophoretic separation of haemoglobins, 2400.

- Jarkowski, T. L., and Williams, L. A. Microelectrophoresis of serum total proteins and lipoproteins, 3915.

See also Itano, M., 2360, Landers, J. W., 5344, and Williams, L. A., 208.

Zakharov, M. S., Stromberg, A. G., and Rodnova, G. G. Polarographic determination of manganese in glass, 4263.

Zaki, M. R., and Shakir, K. Organic azo dyes in quantitative analysis. I. Complexometric titration of thorium, 5198.

Zaltzman, P. See Sjoerdsma, A., 3426. Zamanov, R. Kh. Micro-determination of chloride ions in milk, 733

Zambotti, V. See Bolognani, L., 660.

Zambrini, A. Analysis of driers, 627.
Zamlyński, W. See Woliński, J., 4356.
Zapata, C. See Kaufmann, S., 4417.
Zapiór, B., and Płatek, J. Application of the electrometric contact method to the paper chromatography of some organic acids, 1416.

Zapp, E. É. See Pungor, E., 911, 3158, 4156. Zappalà, M. See Fichera, A., 2994. Zappoli, R. See Chistoni, G., 1873.

Zaremba, J. Simultaneous polarographic determination of lead and zinc in sulphide ores,

Zarembo, J. E., and Lysyj, I. Use of a new stationary liquid phase in gas-chromatography determination of alcohols in the presence of large amounts of water, 2762.

— See also Lysyj, I., 557.

Zarinskii, V. A. See Ryabchikov, D. I., 3246.

Zaslavskaya, L. V., and Popova, N. M. Micro-zonal carbide analysis on the surface of molybdenum steel fractures, 4281.

Zatolokin, E. Ya. See Tarasov, N. Ya., 2066.

Zatuchnaya, L. A. See Evlashin, L. S., 1005. Zavanayu, A. See Bottini, E., 756. Zavaritskaya, T. A. See Tsekhovol'skaya, D. T.,

5192

Zawadzka, H. See Lasiewicz, K., 1282, 1656.
 Zawisza, T., and Kuczyński, L. Isolation of ergot alkaloids by cation exchange, 4993.
 Zbořil, V., Šebestian, I., Trnovec, T., and Durček, K.

Determination of radioactive strontium in urine,

Zdybek, G., McCann, D. S., and Boyle, A. J. Determination of microgram quantities of sulphate in organic linkages, 4812.

Zebreva, A. I., and Kozlovskii, M. T. Use of mixed basal solutions in the polarographic determination of thallium, 3674.

Zeil, W. Applications of micro-wave spectroscopy qualitative and to quantitative analysis. 2606

Zeitlin, H., and Niimoto, A. Comparison of transmittance and reflection spectra of the 2:4dinitrophenylhydrazones of acetone and 4methylpentan-2-one, 1068.

Zelenina, T. P. See Lysenko, V. I., 931. Zeliger, B. N. Electrophoretic apparatus with automatic registration of the extinction curve,

Zelniček, E. a-Oxoglutaric acid and pyruvic acid in blood, cerebrospinal fluid and urine, 1491. Determination of a-keto acids in cerebrospinal fluid, 1850.

Zel'tser, E. Yu. Complexometric determination of zinc and cadmium in cadmium-based solder,

Zelyanskaya, A. I. See Stashkova, N. V., 3683. Zemany, P. D., Pfeiffer, H. G., and Liebhafsky, H. A. Precision in X-ray emission spectrography. Background present, 3065.

Zenchelsky, S. T. [Review of fundamental developments in analysis.] Thermometric titrations,

Ženišek, A. See Krejči, E., 665. Zentner, H. Continuous electrophoresis of wheat gluten, 5013.

Zetkin, V. I. See Bardenshtein, S. B., 4351. Zhadeev, V. A., and Glazunov, L. A. Amperometric titration of copper, palladium and cobalt by means of 1-nitroso-2-naphthol with a rotating tantalum electrode, 3126.

Zhadnova, E. A., and Vlodavets, I. N. Investigation of the proteins of cows' milk by paper electro-

phoresis, 267.

Zharovskii, F. G. Direct determination of aluminium in iron ores after a simultaneous separation of iron and titanium, 3254.

and Pilipenko, A. T. Colorimetric determination of vanadium in titanium tetrachloride, 3209.

Zhavoronkina, T. K., and Zhavoronkina, V. K. Spectrographic determination of sodium in atmospheric precipitations, 768.

Zhavoronkina, V. K. See Zhavoronkina, T. K.,

Zhdanov, A. K., Khadeev, V. A., and Shamakhmudova, T. B. Amperometric titration of microgram amounts of copper, 2068.

Khadeev, V. A., and Yakovenko, Ya. G. Iodimetric amperometric determination of cobalt with a rotating platinum micro-electrode, 1020.

Zhigach, A. F., Kazakova, E. B., and Kigel', R. A. Analysis of pentaborane, 3155.

Zhigalkina, T. S. See Cherkesov, A. I., 142. Zhitkov, R. D., and Kedrinskil, I. A. The utilisation of radioactive indicators in the electrolytic separation of metals with a nickel cathode, 861.

Zholondkovskaya, T. N. See Busev, A. I., 4167.
Zhukhovitskii, A. A., Kazanskii, B. A., Karymova,
A. I., Pavlova, P. S., Sterligov, O. D., and Turkel'taub, N. M. Chromatographic analysis of C₈ hydrocarbon mixtures, 3354.

Zhukova, N. A. See Budanova, L. M., 40, and Sergeev, E. A., 3274. Zhuravlev, L. G. See Isaeva, K. G., 3183.

Ziegler, C. A., Bird, L. L., and Chleck, D. J. X-ray Rayleigh scattering method for analysis of heavy

atoms in low Z media, 3067. Ziegler, M. Extraction of transition metal - thiosulphate complexes, 346. Precipitation of complex ions of the transition metals with watersoluble plastics, 347. The extraction of transition metals as polyglycol-oxonium complexes and the detection of cobalt as a polyoxyethylene

glycol - thiocyanate complex, 2735. Glemser, O., and Baeckmann, A. von. Separation of niobium from tantalum by extraction as tributylammoniumniobium thiocyanate, 3714.

Sbrzesny, H., and Glemser, O. Separation of silver from lead by extraction as silver isopropenylacetylide, 30. Separation of silver from lead by extraction of tributylammonium thiocyanatosilver, 3140. The extraction of silver as tri-n-butylammonium - silver saccharin, 4668.

Ziegler, W. A. See McBride, C. H., 335.

Zill, H. J. M. van, and Geerling, H. Vitamin K₃

[menaphthone] and vitamin K₃ bisulphite menaphthone sodium bisulphite]. Determination and comparison of stability in vitamin preparations for cattle feeding, 3539.

Zijp, J. W. H. Quantitative determination of zinc

diethyldithiocarbamate, 2350.

Zimmerman, J. B., and Ingles, J. C. Isolation of the rare-earth elements, a chlorination - volatilisation procedure, 4180.

Zimmermann, G. See Kwietny, A., 5358. Zimmermann, Helmut. Determination of traces of

sulphur in small amounts of air, 1950.

Zimmermann, Hildegard. Colorimetric determination, without previous isolation, of glutamic acid in hydrolysates of nutrients, 4948.

Zimmermann, R. See Täufel, K., 2992. Zink, T. H. "Vacuum cup" electrode for the spectrochemical analysis of solutions, 2545.

Zin'kov, Z. E., and Pŷlaeva, L. I. Analysis of mixtures of aniline and mono- and di-methylaniline, 4357.

Zinner, G. Paper-chromatographic detection of D-galactose in urine, 648.

Zipf, K. See Schmid, A., 5345. Zischka, B. See Pack, A., 1755. Zittel, H. E., Miller, F. J., and Thomason, P. F. Amperometric titration of barium, 1285.

Zittle, C. A., Pepper, L., and Bingham, E. W. Influence of magnesium ions on the ultra-violet absorption of aqueous solutions of salicylic acid and related compounds, 4849.

See also Geller, J. H., 5379. Zlatkis, A., and Kaufman, H. R. Use of coated tubing as columns for gas chromatography, 3559. - Oró, J. F., and Kimball, A. P. Direct aminoacid analysis by gas chromatography, 4425.

Zmijewska, W. See Nowicka-Jankowska, T., 498.

Znamenskaya, N. B. See Korol', A. N., 3583.
Zoeten, E. de. Microchemical identification of chlorothiazide and dihydrochlorothiazide, 5008.

Zöllner, G. See Tsuk, L., 2792.
Zolotavin, V. L. See Ponomareva, L. K., 5042.
Zondag, H. A., and Boetzelaer, G. L. van. Determination of protein in cerebrospinal fluid. Sources of error in the Lowry method, 3919.

Zonneveld, H., and Meyer, A. Determination of sulphurous acid in foodstuffs, especially de-hydrated vegetables, 3991.

Zotti, G. de, Capella, P., and Jacini, G. Paper

chromatography of sterois, 3447.

Zoubovsky, M. The "Matveef test" applied to different varieties of hard and soft wheats,

Zubrzycki, Z. J. See Budzyński, A. Z., 4494. Zuehlke, C. W. See Bush, D. G., 1273. Zuliani, G. See Papoff, P., 4598. Zuman, P. [International Symposium on Micro-

chemistry. Birmingham, 1958.] Polarography and structure of organic compounds, Polarographic micro-analysis in reaction kinetics,

Zussor, E. E. Determination of sulphur in yellow

phosphorus, 954.

Zvyagintsev, O. E., and Shamaev, V. I. Determination of trace impurities in high-purity selenium,

Zweig, G., and Cosens, G. R. Residue analysis of gibberellic acid in grapes by bioassay and isotope methods, 3012.

Methods, 3012.
Zwiers, J. H. L. See Salomon, G., 5327.
Zwierzchowski, Z. See Kalinowski, K., 721, 2920.
Zwierzykowski, W. See Niewiadomski, H., 4376.
Zÿka, J. See Berka, A., 2957, Doležal, J., 852, 2867, 2956, 3121, 3223, Michal, J., 2070, Pavliková, M., 4127, Rottová, O., 2190, Spinková, V., 2953, 4463, and Vulterin, J., 3635.

INDEX OF SUBJECTS

ADCT. (See 1:2-Diaminocyclohexane-NNN'N'tetra-acetic acid.)

AEGT. (See 1: 2-Di-(2-aminoethoxy)ethane-NNN'N'tetra-acetic acid.)

APO. (See Tris-(1-aziridinyl)phosphine oxide.) Absorptiometer, i.r., use of, in analysis of HF in gaseous mixtures, 834.

Absorptiometry, application to soln. containing more than one component, 5511. principles of recorders for, 2010.

use of selenium-barrier cell in, 831.

Acacia berlandieri, determination of N-methyl-2phenylethylamine in, spectrophotometric, 4995. Acacia gum, determination, in confectionery products, 3985.

[See NN'-Bis-(N-methylquinolinylurea) methylsulphate.]

Accelerators. (See Rubber.)

Acetaldehyde, determination, gas chromatographic,

in ethylene oxide, 2278.

Acetamide, titration of, use of photometric indicator in, 3809.

5-Acetamidomethyl-4-amino-2-methylpyrimidine, determination, polarographic, 4464.

Acetarsol, identification, 1907. Acetazolamide, determination, in urine, spectro-

photometric, 4913. Acetic acid, analysis of, spectrographic, 4110.

determination, in fish-pickling bath, 1914. in presence of Cr acetate, potentiometric, 479. in soln., use of miscibility temp. in, 4589. of water in, spectrophotometric, 2774.

esters of, determination, in air, spectrophotometric, 1584.

photographic, B.S.I. specification for, 3804. Acetic anhydride, determination, in presence of acetic acid, thermometric, 182.

of acetic acid in, spectrophotometric, 4333.

Acetol, separation, from lactaldehyde and pyruvaldehyde, chromatographic, 2279.

Acetone, determination, 1069. in urine, fluorimetric, 4920. polarographic, 1067.

transmission and reflection spectra of, 1068. Acetophenetidin. (See Phenacetin.)

Acetylacetonates, metal, extraction of, 2612. Acetylacetone, determination, spectrophotometric, 1414.

use of, as masking agent, in analysis, 5135.

Acetylation of hydroxy compounds, use of metallic zinc catalyst in, 4322

Acetylcholine, assay of, 3895

N-Acetyl-D-glucosaminylisonicotinic acid hydrazide, determination, 3969. 3-Acetyl-4-hydroxycoumarin, use of, in separation of

Th from U, 4764. N-Acetylneuraminic acid. (See Sialic acid.)

Acetylsalicylic acid, determination, 1898. spectrophotometric, 3481.

Acid Alizarin black SN. (See Dyes, C.I. Mordant Black 25.

Acid Chrome dark blue. (See Dyes, C.I. Mordant Blue 7.)

Acids, inorganic, determination, 581.

Aconite, determination of alkaloids in, 2423.

Acrylic acid, determination, in air, spectrophotometric, 5039.

in elastomeric polymers, 2340. Acrylic esters, determination of double bonds in, 1794.

Acrylic monomers, determination of phenols in, 1096.

Actinides. (See Rare earths.)

Actinium, determination, in radioactive ores, 2031. separation, from other radio-isotopes, 3620.

from Sc, Y, and the lanthanides, paper chromatographic, 4176.

from thorium nitrate, by ion exchange, 2156.

Acyl groups, determination, review, 1776. Adenine, determination, 4939.

Adenine phosphates, separation and determination, paper chromatographic, 1520.

Adenosine phosphates, determination, spectrophotometric, 1131.

Adenylcobamide coenzyme, determination, spectrophotometric, 3941.

Adhatoda vasica, determination of vasicine in, 247. Adipic acid, analysis of mixtures of, with glutaric and succinic acids, chromatographic, 2282. determination, in alkyd resins, 2858.

i.r. spectrum of, 3808.

Adrenaline, determination, 2927. fluorimetric, 3893.

in blood, spectrofluorimetric, 662.

in plasma, 4938.

in tissues, simple technique for, 4938.

photometric, 5399.

spectrofluorimetric, 2428.

separation, from noradrenaline, in urine, electrophoretic, 5409.

use of flavylium perchlorate as reagent for, in paper chromatography of, 3112.

Adrenochrome, determination, in plasma, spectrofluorimetric, 1129, 3894. spectrophotometric, 2928

Aerosols, detection, in air, 4020. testing methods for, 4469.

Aetiocholanolone. (See 5β-Androstan-17-one, 3α-

Agar, analysis of, standard method for, 1911. Agglomerate, fluxed, determination of CaO in,

spectrographic, 1283.

Agroclavine, detection, by u.v. fluorescence, 3468. Air, analysis of, apparatus for, automatic, 280. dust in, radiochemical, 4512.

gas chromatographic, 1951.

use of liquid absorbers in, review, 5038.

detection of aerosols in, 4020.

of Be in, spectrographic, 4135. of boron hydrides in, spectrophotometric, apparatus for, 2089.

of carbon dioxide in, apparatus for, 5470. of hydrocarbons in, by i.r. analysis, 773.

of Hg in, spectrographic, 4135.

of phosgene in, 5040. of proteins in, apparatus for, 1585.

determination of acetic esters in, spectrophotometric, 1584.

of acrylic acid in, spectrophotometric, 5039. of aniline in, 4018.

of benzene in, polarographic, 2491.

Aldosterone, determination, in urine, chromato-Air, determination-continued of benzidine in, 3005. graphic, 2912, 2913. of Be in, spectrographic, 3528. separation, from mixtures of cortisol and cortisone, paper chromatographic, 717. of CS, in, u.v. spectrophotometric, 956. of CO in, 5471. Aldrin, detection, 1973. of Cl- in, spectrophotometric, 770. in natural water, i.r. spectrophotometric, 2497. of F- in, apparatus for, 1184. determination, in olive oil, 792. of HCN in, apparatus for, 5472. Alginates, detection, in milk, 739.

Alginic acid, use of, as cation exchanger, in separaof H₂S in, apparatus for, 5472. tion of Th and Ce, 4727. u.v. spectrophotometric, 956. of Pb in, 4508. of Hg in, 771. Alimentary pastes, detection of added xanthophyll in, chromatographic, 2449. Alizarin yellow R. (See Dyes, C.I. Mordant Yellow 1.) of methacrylic acid esters in, photometric, Alkali metals, chromatography of, 4056. 5039. of methane in, 281. determination, 871. of Ni in, 4510. of nickel tetracarbonyl in, 4510. flame photometric, 1260. in uranyl nitrate, flame photometric, 335. mass spectrometric, 2623. of NO, in, 4017.
of N₂O in, 772.
of olefins in, spectrophotometric, 2754. of impurities in, spectrographic, 2062. spectrographic, 2061. of pentachlorophenol in, 4019. of SiO₂ in, spectrographic, 3528. flame photometry of, elimination of interferences in, 4660. of Ag in, spectrographic, 3528. separation, by ion exchange, 2060. of Na in, spectrographic, 768. chromatographic, 4117. Alkaline-earth metals, chromatography of, 4056. of S in, photometric, 1950. of SO₂ in, 4509. determination, by ion exchange, 1744. by galvanic micro-piles, 2610. flame photometric, 3638. in television screens, spectrographic, 2636. of sulphur oxides in, 769. of ThO₂ in, spectrographic, 3528. of trichloroethylene in, indicator tube for, 1183. of impurities in, spectrographic, 2062. Alkaloids, analysis of, paper chromatographic, 244. of H₂O in, 1949. detection, in urine, paper chromatographic, 1116. spectrophotometric, 2490. on paper chromatograms, 1536. of xylene in, 4511. determination, 1886, 3943, 3945. luminescence spectra of, 3612. paper chromatographic, 5401. sampling, apparatus for, direct reading, 1597. spectrophotometric, 1888. self-sampling indicator tube for, 5486. u.v. spectrophotometric, 2917. general test for, 2031. identification, 2426. Alanine, i.r. spectrum of deuterated, 3904. Albumin, detection, in urine, indicator for, 1871. determination, in serum, amperometric, 3913. paper chromatographic, 3944. fluorimetric, 4959. isolation, 1887. from plants, 1156. factors affecting trailing of, in electrophoresis, reaction of, with bismuth iodide, 4991. separation, from barbiturates, by thin-layer 4068 Alcohols, aliphatic, separation, from hydrocarbons, 177. chromatography, 3976. in toxicology, paper chromatographic, 1157. solanaceous, extraction of, 2921. analysis of, gas chromatographic, 4326. determination, 1410, 2761, 2762, 4324. by isotopic dilution method, 3303. identification, 2922. of hydroxyl value of, near i.r. spectrophotoseparation, by ion exchange, 1890. metric, 3302. titration of, with Na tetraphenylboron, 5400. of water in, 4657. Alkanes. (See Hydrocarbons.) higher, analysis of, gas chromatographic, 2268. identification and determination, spectrophoto-Alkanolamides, separation, from detergents, paper chromatographic, 1448. Alkanolamines, separation, from detergents, paper chromatographic, 1448. metric, 4325. paper electrophoresis of, 1060. separation, gas chromatographic, 5268. Alkoxyl groups, determination, 2751, 3102, 4814, 4815. paper chromatographic, 4323. study of, mass spectrometric, 4336. gas chromatographic, 1055. Aldehydes, analysis of, methods for, review, 3104. review, 1054, 1776, 1778. aromatic, separation, chromatographic, 806. use of solid scrubbers in, 3295. detection, in fatty oils, paper chromatographic, Alkylbenzenes, C, to C₁₀, determination, i.r. spectro-photometric, 589. determination, 573, 575, 1413, 2031. determination, i.r. spectrophotometric, 590. flash exchange gas chromatographic, 4825. determination, i.r. data for, 3324, 3325, 3326. Alkylbenzenesulphonates, determination, in natural water, spectrophotometric, 1957. gas chromatographic, 577. in foods, 5425.

polarographic, 3309. separation, from ketones, paper chromatographic, 1789, 5278. paper chromatographic, 2773. Alder buckthorn. (See Frangula bark.)

Aldoric acids, separation, by ion exchange, 3317. Aldose, determination, spectrophotometric, 2767.

paper chromatographic, 3040, 3310.

paper electrophoretic, 1065.

Alkylindoles, mass spectra of, 2317.

Alkylketen, dimers, determination, 2265.

Allantoin, determination, in urine, 2391.

spectrophotometric, 2888.

Allobarbitone, determination, spectrophotometric,

in sewage, spectrophotometric, 1957.

Alkyl halides, determination, 581

identification, 2918.

Alloys. (See also under individual metals.) analysis of, standardisation method for, spectrographic, 863. antifriction, assay of, spectrographic, 2031. high-temp., analysis of, by X-ray fluorescence,

2245 non-ferrous, determination of Ni in, 3769.

reactor, analysis of, 335. Allyl alcohol, determination, 3304.

of purity of, 1794.

Allyl chloride, determination, gas chromatographic,

4-Allyl-NN-diethyl-2-methoxyphenoxyacetamide, determination, in blood, spectrophotometric,

in placentae, spectrophotometric, 4914.

5-Allyl-5-cyclohexenylbarbituric acid, detection, 3469

5-Allyl-5-isopropylbarbituric acid. (See Aprobarbital.)

Alodan, determination, in grain, i.r. spectrophotometric, 1977.

Aloes, determination of aloin in, photometric, 248. of anthraquinones in, 2430.

Aloin, determination, in Cape aloes, photometric, 248.

difference between crystalline and amorphous, 3477.

Alphazurin. (See Dyes, C.I. Acid Blue 9.) Alumina, analysis of, B.S.I. method for, 3162. determination, in aluminium, photometric, 3665.

in steel, photometric, 1014. of F in, spectrographic, 4258. dissolution of fused, 3163.

ignition of ppt. of, 5175. Aluminium, analysis of, 2096. B.S.I. method for, 2639.

of corrosion products of, 4159. of mixtures of, with Ga and In, i.r. spectro-

photometric, 2645. spectrographic, 409, 2641.

detection, 50, 3157. spectrographic, 18.

determination, 51, 911, 912, 1256, 1684, 2031, 2090, 2092, 2668, 3158, 3662, 3663, 3664, 4653, 5166, 5172.

apparatus for, 3576.

by high-frequency titration, 4156.

flame photometric, 11.

flame spectrophotometric, 5162. enhancement of, by fluoride ions, 5173.

in basic slag, 2744. in bauxite, X-ray fluorescence spectrographic, 1386.

in brass, 5171.

in bronze, 1690, 3666, 5171.

in calcium, 38.

in catalysts, 4157.

in chromium, 3743.

in clay, 1035.

X-ray fluorescence spectrographic, 1386. in copper alloys, 3159.

in fuel ash, 1392.

in high-temp. alloys, 2093, 4278. in iron, B.S.I. method for, 1362.

in iron alloys, B.S.I. method for, 1362.

in iron ores, 3254.

in magnesium, by luminescence, 3145. in magnesium alloys, 1302, 3619.

in manganese, spectrographic, 1347

in minerals, spectrophotometric, 2247.

in Ni Cr alloys, 155.

in Nimonic alloy, spectrographic, 2644.

Aluminium, determination-continued

in plant tissue, fluorimetric, 2868.

in Pu - Al alloys, by ion exchange, 4689. in presence of Cr. 1301.

of fluoride, 3667.

of Ga, polarographic, 2097.

of Fe. 408, 1304

in reactor cooling water, by neutron activation analysis, 4158.

in rock salt, 5142.

in rocks, 2095.

in serum, by ion exchange, 4904. spectrophotometric, 4903.

in silicone resins, 5329.

in slags, photometric, 410. in steel, 4278.

B.S.I. method for, 1362. radiochemical, 2640.

spectrographic, 1361, 3260, 3750. spectrophotometric, 2232, 2233.

in tellurium, by ion exchange, 5225.

in thorium oxide, 335.

in titanium, by ion exchange, 76.

in titanium alloys, by ion exchange, 76. spectrographic, 863, 2642.

in uranium, spectrographic, 493, 4354.

in Zircaloy, spectrographic, 2140.

in zirconium and Zircaloy, fluorimetric, 939. spectrographic, 2140.

of alumina in, photometric, 3665.

of Cd in, spectrophotometric, 4161. of Ca and Mg in, 3161. of Co in, spectrophotometric, 542.

of Cu and Fe in, simultaneously, by cathode-ray polarography, 5177.

of Cu in, photometric, 376, 4125. spectrophotometric, 3632 of Mg in, spectrographic, 1303.

of O in, by vacuum fusion, 52.

of Si in, 4188. B.S.I. specification for, 4160.

of Ti in, spectrophotometric, 3188. photometric, 411.

radiometric, 2090. spectrographic, 5174.

spectrophotometric, 2643, 4269, 5203.

simultaneously with iron, in sea water, spectrophotometric, 2498.

use of aluminon in, 4630. fluorescence reactions of, 892.

phase analysis of, in steel, spectrographic, 1360.

polarography of, 4155.

reaction of, with Solochrome Violet RS, 4155. separation, by ion exchange, 2091.

from Cr and Fe, paper chromatographic, 2614.

from elements forming thio salts, 3668.

from Ga, In and Tl, chromatographic, 3670. from Fe, in soil, 4525.

of U from, by ion exchange, 489.

Aluminium alkyls, determination of reducing capacity of, 175.

Aluminium alloys, Al - Ca - Si, determination of Ca, in, 4140.

Al - Cu, analysis of, X-ray fluorescent spectro-

Al - Pu, determination of Al in, by ion exchange, 4689.

Al - Ag, analysis of, X-ray fluorescent spectrometric, 3669.

analysis of, 3619. B.S.I. method for, 2639.

spectrographic, 409, 2646, 3160.

Aluminium alloys—continued determination of Al in, 2093.

of Be in, photometric, 40. spectrophotometric, 389. of Co in, spectrophotometric, 542.

of Cr in, polarographic, 3220.

of Cu in, 2624, 4125.
of H in, use of "Telegas apparatus" in, 5176.

of Pb in, spectrophotometric, 432.

of Si in, 4188 B.S.I. specification for, 4160. polarographic, 4703.

of Zn in, X-ray spectrographic, 4681. identification of, 2094.

Aluminium black, determination of Cr in, use of radioactive Cr₂O₃ in, 2031.

Aluminium fluoride, analysis of, 3276.

determination of F in, potentiometric, 125. Aluminium nitrate, methods for the inspection of,

Aluminium nitride, determination, in steel, 4279.

Aluminium oxide. (See Alumina.)

Aluminium potassium sulphate, determination of

Pb in, polarographic, 4599. Aluminium sulphate, determination, 1337.

Aluminon, use of, in determination of Al, 4630. Aluminosilicates, study of surface acidity of, 4706. Alundum, analysis of, spectrographic, 1391. Americium, determination, in plutonium, by a- and

γ-ray spectrometry, 5239. separation, from Np, Pu and U, electrolytic, 5236.

Amethocaine, determination, photometric, 5399. Amidines, polarography of, 4337.

Amidinomelamines, u.v. absorption spectra of, 3832. Amidopyrine, detection and determination, 1548. determination, 255, 1546, 1549.

separation, from quinine, codeine, papaverine or yohimbine, by ion exchange, 3965.

Amines, aliphatic primary, se chromatographic, 3319, 5286. separation, paper

aromatic, separation, chromatographic, 2802 primary, detection, 2801. detection and determination, spectrophoto-

metric, 1085.

colour reactions of, 1501. determination, 2287.

conductimetric and potentiometric, 1798. paper chromatographic, 5285.

review, 3795.

spectrophotometric, 4829.

differentiation between primary and secondary, 3320

identification, 4356.

primary, determination of secondary amines in, 2290.

identification, 585.

secondary, determination, in high-mol.-wt. fatty primary amines, 2290.

paper chromatographic, 1099. separation, chromatographic, 1424. comparison of methods for, 4418.

from amino acids, by ion exchange, 3898.

tertiary, determination, 1799.

use of N-(hydroxymethyl)-3- and 4-nitrophthalimides as reagents for, 2289.

Amino acids, α-, detection, 1133. analysis of, gas chromatographic, 4425.

paper chromatographic, 2527. assay of, microbiological, 2394, 3102, 5126. review, 699.

automatic analysis of, 2891, 4424. colour reactions of, 1501.

derivatives of, detection, paper chromatographic,

Amino acids, derivatives of-continued

i.r. spectra of, 2894.

detection, in spirit vinegar, paper chromato-graphic, 5433.

with bromocresol purple, paper chromatographic, 668.

determination, 1860, 2890, 3493, 4421, 5368.

by ion exchange, 3498.

combined electrophoretic and chromatographic. 1502.

gas chromatographic, 671.

in biological materials, chromatographic, 4422.

in blood, spectrophotometric, 1132.

in c.s.f., photometric, 3899.

in peptides, 2896. in plants, spectrophotometric, 670.

in plasma, c.s.f. and urine, 3427. in plasma, photometric, 1503, 3899.

in polypeptide, 2031.

in serum, electrophoretic and paper chromatographic, 1861. photometric, 3899, 3900.

in urine, photometric, 3899. methods for, review of, 1856.

of a-amino N in, 1855.

of mixtures, automatic chromatographic, 3105.

of N in, 3903.

paper chromatographic, 1135, 1136, 4053.

polarographic, 1858.

reaction of -NH-CO- group with HNO₄, 225. spectrophotometric, 1141, 4419, 4420, 4946,

differentiation of, paper chromatographic, 4944. dinitrophenyl deriv., identification and determination, paper chromatographic, review, 673.

horizontal paper chromatography of, time-saving applications in, 5490.

identification, 4942.

i.r. spectra of deuterated, 3904.

iodo deriv., separation, from plasma, by ion exchange, 3435.

separation, 3901.

by ion exchange, 224, 3902. chromatographic, 671, 1857, 2392.

electrophoretic, 2393, 2892.

from amines, by ion exchange, 3898.

from mixtures of cortisone, deoxycortisone and Na salicylate, paper chromatographic, 716. from organic P compounds, paper chromato-

graphic, 4945.

from peptides, paper chromatographic, 3429. from sugars and organic acids, by ion exchange, 2383.

in plants, by ion exchange, 669.

in plasma, paper chromatographic, 1859.

in protein hydrolysate, paper chromatographic, 1859, 3489.

in urine, paper chromatographic, 1859. paper chromatographic, 674, 3428, 4943. effect of saponin on, 1134.

Amino groups, α-, determination, 1855, review, 3795.

Amino sugars, N-acetyl-, detection, on paper chromatograms, 2385. determination, 2384.

Aminoacetone, determination, spectrophotometric, 3912

4-Amino-5-aminomethyl-2-methylpyrimidine, determination, polarographic, 4464.

7-Amino-8-(4-amino-2-sulphophenylazo)-1-naphthol-3-sulphonic acid, disodium salt, use of, in determination of nitrous acid, spectrophotometric, 4215.

Aminoanthraquinones, 1- and 2-, separation, paper Ammonium ion, determination-continued chromatographic, 607.

Aminobenzoic acid, p-, determination, 3891. separation from procaine, electrophoretic, and determination, 721.

Aminochromes, determination, in plasma, spectrofluorimetric, 3894.

4-(2-Aminoethyl) catechol. (See Dopamine.) Aminoethyl vinyl ether, analytical study of, 2291. 2-Aminofluorene, detection and determination,

Aminohexoic acid, ←, ← electrophoretic, 3433. determination, in urine,

spectrophotometric, 1085.

Aminolaevulic acid, determination, spectrophotometric, 3912.

Aminonitriles, α-, determination, 4338.

Aminophenol. m-, determination, spectrophotometric, 1553.

p-, determination, spectrophotometric, 1553. separation, from N-acetyl-p-aminophenol, in urine, by ion exchange, 4459.

2-Aminophenol-4-sulphonic acid, use of, in determination, of Os, spectrophotometric, 5257. Aminophenols, determination, 3891.

7-(3-Aminophenylazo) chromotropic acid, use of,

as reagent for Be, 890 N-(2-Aminophenyl) morpholine, use of, in determination of nitrite, spectrophotometric, 5206.

N-(2-Aminophenyl) piperidine, use of, in determination of nitrite, spectrophotometric, 5206.

1-Aminopropan-2-ol, separation, from detergents, paper chromatographic, 1448.

4-Aminosalicylic acid, determination, in serum, 643. spectrophotometric, 1553. use of flavylium perchlorate as reagent for, in

paper chromatography of, 3112.

3-Amino-1:2:4-triazole, paper chromatography of, 4532

Amiphenazole, determination, spectrophotometric, 256.

Ammonia, analytical methods for inspection of, 2588. determination, 1706, 2684, 2686, 4213.

apparatus for, 1986.

B.S.I. specification for, 3030. gas chromatographic, effect of carrier humidity on, 2685.

in blood, 3391. in brain, 211

in plasma, 3391. in presence of nitrides, 3699.

study of, polarographic, 4728. Ammonia liquor, determination of Ge in, photo-

metric, 2665.

Ammonium benzeneseleninate, use of, in determina-

tion of Ti, 4197 Ammonium bisulphite, determination of NH, in, 2687.

Ammonium ferrous sulphate. (See Iron (II) ammonium sulphate.)

Ammonium fluoride, determination, of B in, spectrophotometric, 407.

of Cu in, polarographic, 358. of Fe in, polarographic, 358.

of Pb in, polarographic, 358, 433.

of Li in, spectrographic, 360.

of Pt in, 550. of SiO2 in, 1259.

Ammonium fluoroberyllate, determination of Mn in, 2720.

Ammonium ion, detection, 367.

determination, 14.

conductimetric, 369, 3624. in ammonium bisulphite, 2687. in presence of CN-, NO₂- and NO₃-, 451. in sulphite liquor, 2687. with Na tetraphenylboron, review, 851.

study of, polarographic, 4728

Ammonium naphthaleneseleninate, use of, in determination of Ti, 4197.

Ammonium nitrate, analysis of, 4090. Ammonium salts, determination, 1705.

of Cu in, 3134. of S-containing acids, determination of mixtures of. 1722.

Amphenone B. [See 3: 3-Di-(p-aminophenyl)butan-2-one

Amphetamine, detection, in urine, paper chromatographic, 1116. determination, spectrophotometric, 5416.

identification, 1901.

Amphisol. (See Amiphenazole.)

Amphotericin B, determination, microbiological,

Amydricaine, detection, oscillopolarographic, 1163. isoAmyl alcohol, separation, from ethanol, gas chromatographic, 2465.

Amylase, assay of, 3929.

determination, in biological fluids and serum, photometric, 3930.

in flour, 3980.

in malt, 2467.

in plasma, spectrophotometric, 4981.

photometric, 2914.

spectrophotometric, 4980. Amylobarbitone, identification, in blood, u.v. spectrophotometric, 252

Amylocaine, detection, oscillopolarographic, 1163. electrophoretic behaviour of, 3967.

Amylose, determination, in starch, spectrophotometric, 4414.

Anaesthetics, local, detection, oscillopolarographic, 1163. determination, 1899.

electrophoretic behaviour of, 3967.

identification, paper chromatographic, 3966. Analgesics, identification, 5414.

Analytical chemistry, applications to reactor re-search at Harwell, 335.

automation in, 2591.

fundamental developments in, review, 5125 of the Lockheed critical experiment reactor, 335. measurements without calibration curves in, 1233. progress in 1958, 2033.

reduction by metals and metal reductors in, review, 852.

standardisation in, 848 steric hindrance in, 2031.

use of trace elements in, 2590.

Anatase, analysis of, use of dielectric constant for, 859.

determination of Cu and Sb in, polarographic, 1321

5α-Androstane-11:17-dione, 3α-hydroxy-, oxoandrosterone), determination, in urine, paper chromatographic, 691.

5β-Androstane-11:17-dione, 3α-hydroxy-, (11-oxoaetiocholanolone), determination, in urine, paper chromatographic, 691.

3a: 11-dihydroxy-, 5α-Androstan-17-one, (11hydroxyandrosterone), determination, in urine,

paper chromatographic 691. 5α-Androstan-17-one, 3α-hydroxy-. (See Androsterone.

 5β -Androstan-17-one, 3a: 11-dihydroxy-, hydroxyactiocholanolone), determination, in urine, paper chromatographic, 691.

5β-Androstan-17-one, 3α-hydroxy-, (aeticholanolone, determination, in urine, paper chromatographic, 691.

Androst-5-ene-3:17-diol, 17-methyl-, colour reaction of, 3923.

Androst-4-ene-3:17-dione, determination, in urine, paper chromatographic, 691.
Androst-4-en-3-one, 17β-hydroxy-17α-methyl. (See

 Androst 4-en-3-one, 17β-hydroxy-17α-methyl. (See Methyltestosterone.)
 Androst 4-ene-3:17-dione, oscillographic polaro-graphy of, 2903.

Androst-5-en-17-one, (dehydroepiandrosterone), colour test for, 3923.

determination, in serum, paper chromatographic, 2909.

in urine, paper chromatographic, 691, 2911.

Androsterone, determination, in plasma and urine, 3455.

in urine, paper chromatographic, 691.

Angiotensin. (See Hypertensin.)

Aniline, analysis of, 4357.

determination, in air, 4018.
5-Anilino-2-mercapto-1:3:4-thiadiazole, use of, in determination of Cu, 1267.

of Ag, 3634.

Animal tissue, determination of 2-dimethylaminoethanol in, chromatographic, 1488.

of fatty acids in, 658. of hexosamines in, 660.

of 3-hydroxysterols in, spectrophotometric, 233. of mercapto groups in, amperometric, 646.

of S in, 3871.

of tocopherols in, 4506. effect of coenzyme Q₁₀ on, 4410. identification of caffeine in, 4405.

of phenacetin in, 4405. of phenazone in, 4405.

Anions, separation, paper chromatographic, 4646. Anisole, analysis of, radiometric, 4300.

u.v. absorption spectrum of, 1805.

Anodising solution, determination of H₂SO₄ in, 1689.
Anserinase, determination of activity of, spectrophotometric, 242.

Anthanthrene, detection, 2301.

Anthocyanogens, determination, in beer, spectrophotometric, 1929.

Anthracene, detection, 3828.

Anthracene blue WR. (See Dyes, C.I. Mordant Blue 32.)

Anthracite, combustion of, in bomb calorimetry,

Anthranilic acid, and deriv., determination, in blood, paper chromatographic, 1506. in c.s.f., paper chromatographic, 1506. in urine, paper chromatographic, 1506.

in urine, paper chromatographic, 1506.

Anthraquinones, detection, by combination of electrophoresis and paper chromatography,

4857.

1:4-, confirmation of structure of, i.r. spectrophotometric, 2031.

determination, in drugs, 2430. survey, 2931.

hydroxy-, separation, paper chromatographic, 1639.

hydroxymethyl-, determination, in frangula, paper electrophoretic, 3962, 4999.

Anthraquinonesulphonic acids, determination, 2315,

2812. titration of, amperometric, 2813.

Anthrone, reaction mechanism of, with sugars, 2031.
Antibiotics, assay of, microbiological, 708, 3102, 5126.

review, 699, 3471. use of resazurin in, 1894. Antibiotics continued

detection, in milk, 3987. in mixtures of, electrophoretic, 709.

determination, in food, 5438.

errors caused by stainless-steel cylinders used in, 3472.

diagnostic discs of, assay of, 5412. linear diffusion of, in agar, 698.

separation, paper chromatographic, 250. solubility in various solvents of, 707.

Anticholinesterases, determination of activity of, 5392.

Antifreeze, ethanediol, determination of benzoate and nitrite in, B.S.I. method for, 1105. of borate in, B.S.I. method for, 1106.

of mercaptobenzothiazole in, B.S.I. method for, 1104.

Antihistamines, identification, in post-mortem organs, spectrophotometric, 3971.

u.v. spectrophotometry of, 3944.

Antihyaluronidase, streptococcal, determination, in serum, 3940.

Antimonate, analysis of, 1331.

Antimony, detection, in biological materials, by fractional analysis, 3394.

in internal organs, paper chromatographic, 3977.
determination, 456, 3205, 4219, 4221.

in blood, spectrophotometric, 2359. in Cr - Ni alloys, 4222.

in electrolytic slimes, 3203. in lead, photometric, 2123. spectrographic, 2669.

in mixtures, oscillopolarographic, 4735.

in molybdenum and molybdates, photometric, 92.

in organic compounds, 3793.

in presence of As, spectrophotometric, 4736. of Bi, Pb and Sn, polarographic, 2054.

in silver, spectrographic, 1274. in titanium dioxide, polarographic, 1321. in urine, spectrophotometric, 2359.

in urine, spectrophotometric, 2359. in zinc, photometric, 4220.

in zinc alloys, photometric, 4220.

in zinc electroplating soln., polarographic, 1287. polarographic, 3128.

spectrophotometric, 352, 2691, 5209. use of fluorotitanic acid for, 1714. of silver reductor for, 3121.

separation, by ion exchange, 3204. from As and Sn, paper chromatographic, 2614. from In and Sn, by ion exchange, 4173. from In, Te and Sn, by ion exchange, 5141.

from Zr, 900. solvent extraction of, 1331.

sulphides of, thermolysis of, 3717.

Antimony alloys, determination of Te in Sb - Pb - Te, 3218.

Antimony potassium tartrate, determination, by activation analysis, 3488. with ICl₂, 855.

Antimony trichloride, separation, from TiCl₄, gas chromatographic, 4199.

Antioxidants. (See also individual compounds.) determination, spectrophotometric, 4893. separation and identification, thin-film chromato-

separation and identification, thin-film chromato graphic, 1580.

paper chromatographic, 1579. Apatite, determination of TiO₃ in, 3189.

Apiole, determination, spectrophotometric, 1435.

Apoatropine, determination, in presence of atropine,

spectrophotometric, 4448.

Apomorphine, determination, spectrophotometric, 3464.

Apomorphine hydrochloride, assay of, spectrophotometric, influence of slit width on, 700.

Apples, determination of cyanide in, 3505 Aprobarbital, determination, spectrophotometric, 718

separation, from barbitone, chromatographic, 3963.

Arabinose, identification, paper chromatographic, 2272

separation, from other sugars, in urine, paper chromatographic, 647.

Arabinosides, methyl-, separation and determination, 2771.

Arabonic acid, separation, by ion exchange, 3317. Arachis oil, determination of iodine value of,

Arbutin, determination, spectrophotometric, 2429. Arginine, detection of amino-acid impurities in, 4949.

determination, 1137, 2031.

in plasma, by ion exchange, 3911, 4950. in urine, by ion exchange, 3911.

paper chromatographic, 3430. separation, from histidine, lysine and tryptophan, by ion exchange, 3902.

Argon, determination, 359.

in gas mixtures, gas chromatographic, 2263. in presence of O and other inert gases, gas chromatographic, 3623. in synthesis gas, by X-ray absorption, 2618.

of N in, spectrographic, 4576. luminescence spectra of, 3612.

Arsanilie acid, separation, paper chromatographic, 2806.

Arsenate, determination, 1713.

flame photometric, 11.

in presence of phosphate and silicate, spectrophotometric, 455.

Arsenazo II, use of, in determination of Th, in monazite, spectrophotometric, 5199. Arsenazo III, use of, in determination of Th,

photometric, 3197. spectrophotometric, 5200.

of Zr, photometric, 5194. Arsenic, detection, in brass, spectrographic, 4667. in internal organs, paper chromatographic, 3977.

in tobacco, chromatographic, 4997. determination, 948, 1712, 4218, 4219.

in biological tissue, by activation analysis, 1473, 1474.

in electrolytic slimes, 3203.

in germanium dioxide, spectrographic, 3705. in mixtures, oscillopolarographic, 4735.

in organic compounds, 3294, 3793. photometric, 170.

in petroleum, spectrophotometric, 1821, 1822, 3359.

in plants, spectrophotometric, 1970.

in potatoes, 5012.

in presence of Sb, spectrophotometric, 4736.

in pyrites, radiochemical, 2031. in selenium, spectrographic, 2057.

in sulphuric acid, potentiometric, 90. in treated wood, 4030.

in vanadium, 1334.

of Cu and Fe in, by ion exchange, 3202.

of impurities in, 3201.

potentiometric, 91.

spectrophotometric, 2031, 3704.

together with P, in steel, spectrographic, 3263. reduction of As^V, 2165.

separation, from Sb and Sn, paper chromatographic, 2614.

Arsenic, separation-continued from Zr. 900.

sulphides of, thermolysis of, 3717. Arsenic trioxide, determination, with ICl, 855.

Arsenite, determination, 14, 5208. use of, in reduction of manganate, 3742.

Arsenobenzene, separation, paper chromatographic,

Arsine, determination, polarographic, 2690. 4-(2'-Arsono-4'-nitrophenyl)diazoaminobenzeneazobenzene, use of, in determination of Pb and Zn. 4710.

Arsphenamine, separation, paper chromatographic,

Arylsulphonic acids, detection, use of Pinakryptol Yellow in, 3344.

Ascorbic acid, analysis of, review, 3104. determination, 3523.

and stabilisation, in plant material, 2878.

comparison of methods for, 5464. in beer, 3997.

influence of flavonoids in, 4016.

in food, photometric, 5466.

in vegetable extracts, polarographic, review, 278

microbiological, 5467. photometric, 1583. polarographic, 765, 766.

spectrophotometric, 4015, 5465.

identification, i.r. spectrophotometric, 756. Ashing, use of Pyroceram crucibles for, 4073.

Aspartic acid, analysis of mixture with hydroxyproline, 3902.

polarimetry of, 2031.

test for, 4428.

β-Aspartyl hydroxamate, determination, in mix-tures, spectrophotometric, 4947.

Asphalt. (See also Bitumen.) i.r. spectrum of, 2326.

Aspirator, with constant flow-rates, 1596.

Atomic absorption spectrometry. (See metry, atomic absorption.)

Atropine, determination, chromatographic, 2923. in belladonna, 3465.

spectrophotometric, 3463, 3947.

separation, from hyoscine, paper chromatographic, 1538.

Aturban. (See Phenylglutarimide.)

Aucubin, determination, in Plantago, paper chromatographic, 4457. Aurazin G. (See Dyes, C.I. Basic Yellow 6.)

Aureothricin, determination, in mixture with thio-

lutin, i.r. spectrophotometric, 2935 Aurine, polarographic behaviour of, 4881.

Autoclaves, chemical control of temp. in, 335. Automatic operations, applications to chemical analysis, 3105.

monitor for, 3103.

Automation, application of, in analytical chemistry,

Azacyclonol, determination, in urine, spectrophotometric, 3485.

6-Azauracil, determination, polarographic, 2952, 4436

6-Azauridine, determination, polarographic, 4436. Azobilirubin, spectrophotometric behaviour of, 4935

Azo compounds. (See also Dyes.) determination, 189, 3820.

use of, in identification of Ca, Mg and Th, 3601.

Azo violet. (See Dyes, C.I. Direct Violet 32.)

Azoic coupling components, X-ray diffraction data

of, 1827.

Babbitt metal, determination of Ca and Na in, spectrographic, 2066.

Balance, automatic recording, 5125.

electromagnetic, 5482. possible uses of, besides weighing, 5060.

for weighing fibres, 4541.

isolation of, against vibration, 5061.

micro-, carrier for, 2510. quick-acting, 794.

Bacitracin, assay of, 708.

Bandages, determination of starch in, 4882.

Barbitone, determination, spectrophotometric, 718. identification, in blood, u.v. spectrophotometric,

separation, from aprobarbital, chromatographic, 3963

Barbiturates. (See also individual compounds.) analysis of, by ion exchange, 1161.

detection, 3462.

determination, in serum, u.v. spectrophotometric, 208.

in urine, 4911.

in viscera, u.v. spectrofluorimetric, 719. spectrophotometric, 718.

identification, 2426.

in blood, u.v. spectrophotometric, 252. in urine, paper chromatographic, 1545.

paper chromatographic, 2433.

reactions of, with copper acetate and amines,

separation, chromatographic, 3963. from alkaloids, by thin-layer chromatography,

Barbituric acid, determination, spectrophotometric, 5289.

detection, in internal organs, paper chromatographic, 3977.

in presence of Sr, 43.

determination, 899, 1253, 2081, 4196.

amperometric, 1285.

flame photometric, 3638, 4143.

in sodium iodide, spectrographic, 996. paper chromatographic, 3643.

radiochemical, 1284.

spectrographic, 2139 oxine complexes of, 4676.

radioactive, determination, in natural water, 283. in sea water, spectrometric, 4677.

separation, from Ca and Sr, 398.

from Mo and Te, 900.

from other radio-isotopes, 3620.

from Ra, by ion exchange, 44.

from Sr and Pb, 2082.

from Sr, paper electrochromatographic, 2080. of 140Ba from 140La, 61.

Barium 8-hydroxyquinolinate, spectrophotometric stability of, on filter-paper, 4647.

Barium polysulphide, determination of S in, 4229. Barium sulphate, determination, i.r. spectrophoto-

metric, 3458. of Ra in, 2638.

dissolution of, 2186.

study of crystal growth of, by electron microscopy, 1720.

Barley, determination of extract in, 1571. of moisture in, 3979.

of protein in, spectrophotometric, 4482.

Barytes, determination of Sr in, spectrophotometric, 3150.

Bases, weak, titration of, photometric, 3281. Bathophenanthroline. (See 4:7-Diphenyl-1:10-

phenanthroline.)

Batyl alcohol, separation, 3306.

Bauxite, analysis of, 3774

determination of Al, Fe and Si in, X-ray spectrofluorimetric, 1386. of Ca and Mg in, 3161.

Beef, determination of volatile components in, 3502. Beer, analysis of, 2987.

calculation of original wort of, 746.

determination of anthocyanogens in, spectro-photometric, 1929.

of ascorbic acid in, 3997.

of bittering power of hops in, 3998. of chloride in, by ion exchange, 2984.

of dissolved O in. 2988.

of disulphides in, by electrolytic reduction, 3996

of extract and alcohol in, use of adapted immersion refractometer in, 2986.

of higher alcohols in, 2466.

of hop bitter acids in, 4000.

of isohumulone in, conductimetric, 4486.

of Fe in, 747.

of tannin in, u.v. spectrophotometric, 1572.

statistical control of alcohol and extract analyses of. 2985.

Beeswax, saponification cloud test for, 4393.

Belladonna, determination, 4447.

of atropine, hyoscine and hyoscyamine in, 3465

Bemegride, determination, 1900. Benactyzine, determination, 3945. spectrophotometric, 2437.

Benzaldehyde, separation, paper chromatographic,

Benzamine, detection, oscillopolarographic, 1163. identification, 2918.

Benzanthrone, use of, in non-aq. acid-base titrations, 1651.

Benzene, alkyl deriv. of, determination, i.r. spectro-

photometric, 4839, 4840, 4841. analysis of, mass spectrometric, 2029. determination, 3356.

in air, polarographic, 2491.

in natural water, spectrophotometric, 781.

in urine, i.r. spectrophotometric, 1482.

of impurities in, 3362.

thermogravimetric, 5293.

i.r. data for, 1802.

nitro deriv. of, i.r. and u.v. spectra of, 3342.

separation of satd. hydrocarbons from, gas chromatographic, 1801.

from toluene and xylene, gas chromatographic, 1089.

study of combustion of, 2822.

Benzenepolycarboxylic acids, determination, spectrophotometric, 4374.

Benzenesulphonamide, u.v. spectrum of, 3487. Benzidine, deriv. of, redox properties of, 2037.

detection and determination, spectrophotometric, 1085.

determination, in air, 3005. spectrophotometric, 3822

titration of, potentiometric, 1436.

use of, as indicator, 2036.

Benzidine-o-sulphonic acid, use of, in determination of Cu, 2031.

Benzil, separation, paper chromatographic, 596. Benzoate, determination, in ethanediol antifreeze, B.S.I. method for, 1105.

Benzocaine, determination, photometric, 5399. Benzoic acid, detection and identification, paper

ate, paper chromatographic, 1790.

chromatographic, 1569. with dihydroindanthrene disodium disulphonBenzoic acid-continued

determination, 2463.

in beverages, spectrophotometric, 1178, 5437.

in jam, spectrophotometric, 5437.

Benzoin, separation, paper chromatographic, 596. Benzonitrile, determination, in dimethylbenzenes, i.r. data for, 3328.

Benzo[ghi] perylene, detection, 2301.

Benzophenanthrene, chromatography of, 4359.

Benzo a pyrene, detection, 2301.

in tobacco smoke, chromatographic, 4997.

Benzo[e]pyrene, detection, 2301.

3:4-Benzopyrene. (See Benzo[a]pyrene.)

p-Benzoquinone, detection, spectrophotometric, 2797

determination, coulometric, 511. separation, chromatographic, 3417.

Benzothiazol-2-yl diethyldithiocarbamate, determination, in rubber, polarographic, 1839.

Benzotriazole derivatives, determination of N in, 3790.

Benzoyl isothiocyanate, Raman and i.r. spectra of,

Benzoylecgonine, identification, 2918.

N-Benzoyl-N-phenylhydroxylamine, use of, in determination of Nb, 2171.

of Sc, 3170.

of Th, 3196. of Zr, 2672.

in separation of Co and Ni from copper, 3267. of Fe and Ti in iron ores, 3254.

of Nb, Ta and Ti, 5215. Benzyl alcohol, determination, 4877.

2-Benzylaminopyridine, determination, 3351.

Benzyldimethylphenylammonium chloride, use of, in determination of Pt, 4293.

Benzylmorphine, detection, 3462. Beryllium, analysis of, 3119.

detection, in air, spectrographic, 4135.

determination, 891, 1278, 4136, 4672. by neutron activation, 2075.

flame photometric, 11.

in air, spectrographic, 3528. in aluminium alloys, photometric, 40.

spectrophotometric, 389. in bronze, electrometric, 3640.

in filter-paper, fluorimetric, 387.

in magnesium alloys, 3619.

in presence of U and Na, 115. of B in, spectrophotometric, 4154.

of C in, absorptiometric, 2587.

of Cl in, 506.

of Cr in, absorptiometric, 2587.

of Cu in, 32.

absorptiometric, 2587. spectrophotometric, 5158.

of free metal and carbide carbon in, 384.

of F in, absorptiometric, 2587.

of Fe in, absorptiometric, 2587.

spectrophotometric, 4673. of Li in, spectrographic, 2588.

of Mn in, absorptiometric, 2587.

of Mo in, spectrophotometric, 5158. of Ni in, absorptiometric, 2587.

of N in, 385, 2587.

of O in, 386, 1673.

by activation analysis, 4137.

of K and Na in, spectrographic, 2588.

of Si in, 33.

absorptiometric, 2587.

of Ti in, 934.

polarographic, 2631.

extraction of, with acetylacetone, 388. with isobutyl methyl ketone, 4109. Beryllium-continued

fluorescence reactions of, 892.

oxine complexes of, 4676.

polarography of, 5157. separation, 390.

on silica gel, 3639.

Beryllium alloys, determination of BeO in, 3142.

Beryllium compounds, determination of Cu in, 393. of Fe in. 392.

of Mn in. 515.

of Ni in, 547.

Beryllium fluoride, determination of BeO in, 391.

of Mn in. 2720.

Beryllium hydroxide, determination of Mn in, 2720. Beryllium oxide, detection of impurities in, spectro-

graphic, 2076. determination, in beryllium alloys, 3142.

in beryllium fluoride, 391.

in copper alloys, 3142.

of Cu and Mo in, spectrophotometric, 5158.

of Fe in, spectrophotometric, 4673.

Beryllon II, use of, in determination of Be, 40.

Betaine, determination, in sugar beet, by ion exchange, 5478.

with Alizarin yellow R, by ion exchange, 3497.

Betaine aldehyde, determination, spectrophotometric, 664.

Beverages, detection of preservatives in, 744.

determination of benzoic acid in, spectrophotometric, 1178, 5437.

of dyes in, 4479.

paper chromatographic, 4480.

of lemon juice in, 2978.

of methyl salicylate in, spectrophotometric,

of safrole in, spectrophotometric, 2977. of vitamin A in, spectrophotometric, 3994.

Beverages, alcoholic, analysis of, gas chromato-

graphic, 2979. 2:2'-Bicinchoninic acid, use of, in determination of

Cu, spectrophotometric, 5149. Bile, determination of bile acids in, chromatographic, 1496.

of oleandomycin in, 1846. Bile acids, determination, in bile, chromatographic,

u.v. spectrophotometric, 237. separation, paper chromatographic, 236, 237.

Bile pigments, separation, radial chromatographic, 2378.

Bilirubin, determination, 4935.

in serum, spectrophotometric, 2379. use of Van den Bergh reagent in, 1497.

"Bio-electronimeter", use of, in qual. analysis, 2039. Biological fluids, determination of amylase in, photometric, 3930.

of CO₂ in, 5340.

of pantothenic acid in, 3884.

of water in, by liquid scintillation spectrometry,

i.r. analysis of, 3858.

of O in, 5340.

Biological materials, detection of metals in, spectrophotometric, 3861.

of Sb in, by fractional analysis, 3394.

determination of Ca in, 3868.

of cyanide in, 4908. of fission products in, 3102.

of Mg in, 3868.

of Hg in, spectrophotometric, 4902.

of Se in. 3396.

spectrophotometric, 3395, 4403.

Biological materials, determination-continued Bisphenol A. [See 2:2-Di-(p-hydroxyphenyl) proof sulphate in, 3216. pane. Bitumen, analysis of, B.S.I. method for, 3843. of S in, by liquid scintillation counting, 4906. asphaltic, identification, absorptiometric, 2031. of Th in, photometric, 5347. of Sn in, spectrophotometric, 5348. determination of porphyrin in, 2826. i.r. spectrum of, 2326. of trace elements in, 3102. of Zn in, 3646, 3647. Biuret, determination, in urea, spectrophotometric, 2296. separation of Ca, K, Mg and Na in, paper chromatographic, 3626. Black-current juice, detection of adulteration in, Biological tissue, detection of Ce in, 4401. determination of As in, by activation analysis, chromatographic, 2459. Blast-furnace gas, analysis of, 2325.
Blende, determination of Ag in, radiochemical, 888. 1473, 1474. of C in, 3860. Blood, detection of glucose in, 5353. of CO in, gas chromatographic, 5341. determination of 4-allyl-NN-diethyl-2-methoxy phenoxyacetamide in, spectrophotometric, of Co in, by activation analysis, 1474. 4914. of cyanoacetic acid in, spectrophotometric, 4440. of amino acids in, spectrophotometric, 1132. of ammonia in, 3391. of Au in, by activation analysis, 1474. of Hg in, 5346. of anthranilic acids in, paper chromatographic, of phosphate in, spectrophotometric, 3392. 1506. of Sb in, spectrophotometric, 2359. of C in, 3860. of riboflavine in, by ion exchange, 5397. of salicylic acid in, spectrofluorimetric, 3401. of tritium in, 3859, 3860. of CO₂ in, 4896, 5340. Biphenyl, determination, 2304. Bis- $\beta\beta$ -butoxyethyl ether. (See Butex.) of C₁₃-C₁₃ fatty acids in, 659. of CO in, gas chromatographic, 5341. of catecholamines in, spectrofluorimetric, 662. spectrophotometric, 4938. of cholesterol in, 1522, 3448. NN'-Bis-(3-dimethylaminopropyl)dithio-oxamide, use of, in analysis, 543. in determination of Pd, spectrophotometric, 4796. of cholinesterase in, 1154. of Rh, spectrophotometric, 4794. of Cu in, 1478. of Ru, spectrophotometric, 1378. of ethanol in, 2872. Biscyclohexanoneoxalyldihydrazone, use gas chromatographic, 4908. of, of fatty acids in, 658. determination of Cu, spectrophotometric, 4125. Bis-(2-hydroxyphenylimino) glyoxal, use of, in deterof glucose in, 2875. mination of U, spectrophotometric, 1731 automatic, 4918. apparatus for, 4916. NN'-Bis-(N-methylquinolinylurea) methylsulphate, polarographic, 3407. determination, 2953. spectrophotometric, 2876, 4917, 4919. Bismuth, detection, in internal organs, paper chromatographic, 3977. of glucuronic acid in, spectrophotometric, 651. determination, 93, 2167, 2692, 2693, 3127, 3206, 3707, 3708, 3709, 3710, 4737. of glutathione in, spectrophotometric, 3910. of glutethimide in, spectrophotometric, 1117. 3873. electrolytic, 1332. in lead, photometric, 3692. of glycerol in, 2367. spectrographic, 2669. of griseofulvin in, spectrofluorimetric, 1483. in meteorites, radiochemical, 1040. of heparin in, 3415. in presence of Pb, 4740. of Pb, Sb and Sn, polarographic, 2054. of hexoses in, with 5-hydroxy-1-tetralone, 3876. of 5-hydroxytryptamine in, spectrofluorimetric, in silicon, spectrographic, 924. in silver, polarographic, 458. of hypertensin in, 213. spectrographic, 1274. of I in, radiochemical, 3398. in zinc electroplating soln., polarographic, of Fe in, 1478, 3448. 1287. of ketones in, spectrophotometric, 5356. of Te in, 477. of kynurenic acid in, paper chromatographic, photometric, 457. 1506. polarographic, 1255, 3128. of kynurenine and deriv. in, paper chromatopotentiometric, 4738, 5210. graphic, 1506. Pb in, 1111. spectrophotometric, 352, 2166, 3706, 4223. separation, from Cd and Cu, paper chromatooscillopolarographic, 5349. of Mg in, 2357. graphic, 2528. from Cd, Cu, Hg and Pb, paper chromatoof mercapto groups in, amperometric, 646. graphic, 2052, 2614. from Cu, electrolytic, 2072. of Hg in, 5346. of α-oxoglutaric acid in, spectrophotometric, from Pb, 4741. 1491. from Hg, 459. of O in, 5340. electrochemical, 4895. from thorium nitrate, by ion exchange, 2156. from U, paper chromatographic, 981. polarographic, 2355. of 213Bi from other radio-isotopes, 3620.

Bismuth alloys, analysis of, 3618. determination of Nb in, 462.

chromatography, 4739.

Bismuth nitrate, behaviour of spots, in paper

Bismuthiol I, use of, in determination of Pd, 158.

Bismuthiol II, use of, in determination of Pd, 158.

of U in, 490.

spectrophotometric, 1476, 4395.
of pH of, apparatus for, 2581.
of P in, 1112.
of pyruvic acid in, spectrophotometric, 1491.
of reducing sugars in, spectrophotometric, 2370.
of Se in, 3396.
of Si in, photometric, 3870.

Blood, determination-continued

of sulphonamides in, 2365, 3403. of tritium in, 3859, 3860.

of urea in, 1486, 3387, 4921. radiochemical, 1119.

spectrophotometric, 2877, 3411, 4408.

of vitamin B12 in, 3885.

of xanthurenic acid in, paper chromatographic, 1506

identification of barbiturates in, u.v. spectrophotometric, 252.

Blood plasma, determination of adrenaline in, 4938. of adrenochromes in, spectrofluorimetric, 1129, 3894.

of amino acids in, 3427., photometric, 1503, 3899.

of a-amino nitrogen in, 3427.

of aminochromes in, spectrofluorimetric, 3894.

of ammonia in, 3391.

of amylase in, spectrophotometric, 4981.

of androsterone in, 3455.

of arginine in, by ion exchange, 3911, 4950.

of Ca in, 1471, 5019.

flame photometric, 3390. of CI- in, potentiometric, 1114.

of chlorpropamide in, spectrophotometric, 4912.

of cholesterol in, 1522.

spectrophotometric, 687, 4437. of Cr and Cu in, spectrographic, 1108.

of corticosteroids in, 3457.

of cortisol and 11-deoxycortisol in, 4439.

of esterified fatty acids in, spectrophotometric, 1128

of fatty acids in, spectrophotometric, 2885.

of fibrinogen in, 2404.

paper electrophoretic, 2403.

of glutamic - oxalacetic transaminase in, 1532. of glutamine in, paper electrophoretic, 1130.

of glutethimide in, spectrophotometric, 3873

of griseofulvin in, spectrofluorimetric, 1483. of guanidinoacetic acid in, by ion exchange, 3911.

of haemoglobin in, 214.

spectrophotometric, 683 of 17-hydroxycorticosteroids in, 3927.

of Fe in, spectrophotometric, 1115.

of isoniazid in, spectrophotometric, 3404. of Mg in, 5019.

spectrographic, 1108.

of mephenesin in, spectrophotometric, 1484. of meprobamate in, spectrophotometric, 3402.

of mesoinositol in, 3880.

of Ni in, spectrographic, 1108.

of isonicotinic acid in, spectrophotometric, 3404

of isonicotinoylglycine in, spectrophotometric, 3404

of noradrenaline in, 4938.

of oestradiol in, paper chromatographic, 234. of oestriol in, paper chromatographic, 234.

of oestrone in, paper chromatographic, 234. of 17-oxosteroids in, 3455.

of dehydroepiandrosterone in, 3455.

of pentose in, spectrophotometric, 1847.

of phenazone in, spectrophotometric, 2354. of progesterone in, paper chromatographic, 238.

of psicofuranine in, spectrophotometric, 3406. of thyroxine in, by double isotope dilution, 1507

of tocopherol in, spectrofluorimetric, 3525.

of tolbutamide in, spectrophotometric, 209.

of urea in, 3387.

spectrophotometric, 3411, 4408.

of Zn in, spectrographic, 1108.

Blood plasma, -continued

proteins, comparison of fractions of, by different methods, 679.

determination, zonal electrophoretic, 1512.

separation of amino acids in, paper chromatographic, 1859.

of cholesterol esters from, 2407.

of iodoamino acids from, by ion exchange, 3435.

Blood serum, analysis of, 1500. i.r. spectrophotometric, 3858.

of fatty acids in, paper chromatographic, 2884. determination of activity of lactic dehydrogenase in, fluorimetric, 4441.

of albumin in, amperometric, 3913.

fluorimetric, 4959. of albumin - globulin ratio in, paper electro-phoretic, 4960.

of alkaline phosphatase in, spectrophotometric, 2417.

of Al in, by ion exchange, 4904. spectrophotometric, 4903.

amino acids in, electrophoretic and paper chromatographic, 1861 photometric, 3899, 3900.

of 4-aminosalicylic acid in, 643.

of amylase in, photometric, 3930.

of bilirubin in, use of Van den Bergh reagent in,

of bromosulphonephthalein in, spectrophotometric, 2366. of Ca in, 1109, 1110, 1471, 2031, 3864, 3865,

4397.

by atomic absorption spectroscopy, 4900. flame photometric, 635.

flame spectrophotometric, 1467, 2356, 3869.

use of metallochromic indicators in, 3866. X-ray spectrographic, 4901.

of carbohydrates in, paper electrophoretic, 5380.

of Cl- in, potentiometric, 1114.

of cholesterol in, 1147, 1522, 2902, 3449. comparison of methods for, 5387. effect of vitamin A on, 2409. electrophoretic, 1148.

spectrophotometric, 687, 1877, 2405, 3924, 4437, 4972.

of choline in, 220.

of cholinesterase activity in, 5392.

of Cu in, 5344.

spectrophotometric, 204, 4898, 4899. of dehydroepiandrosterone in, chromatographic,

2909. of 2:3-dimethyl-1-phenyl-4-pyrrolidino-5-pyr-

azolone in, photometric, 3405. of 2-ethyl-4-thioureidopyridine in, polarographic, 642.

of fatty acids in, spectrophotometric, 4937. of fibrinogen in, paper electrophoretic, 2403.

of gentisic acid in, polarographic, 654.

of glutamic - oxalacetic transaminase in, 1532. of glutamic - oxalacetic and glutamic - pyruvic transaminases in, spectrophotometric, 5395.

of glycerol in, 1485. of glycoproteins in, 3409. chromatographic, 3917.

of griseofulvin in, spectrofluorimetric, 1483. of haptoglobin in, 1514.

of hexosamines in, 3409.

of hexose in, 3409.

of 17-hydroxycorticosteroids in, chromatographic, 2909.

of 3-hydroxysterols in, spectrophotometric,

of 5-hydroxytryptamine in, 2388.

Blood serum, determination-continued Boric acid, determination, in electroplating soln., of Fe in, 4907, 5344. 3271 of B in, 1687. spectrophotometric, 3399. of isoniazid in, 643. spectrophotometric, 3656. of lecithin in, i.r. spectrophotometric, 1499. esters of, determination of B in, 3661. of lipids in, chromatographic, 4936. volatility of, 3659, 3660. Boric oxide, determination, in glass, 1688. of lipoproteins in, 1518. paper electrophoretic, 681. Borides, analysis of, 1388. of Mg in, 1110, 2031, 3863, 4397. iso Borneol, determination, 2840. by atomic absorption spectrography, 1470, Bornite, determination, in copper minerals, 2627. Boron, analysis of, in glass, by neutron transmission, 4900. 5169. flame spectrophotometric, 1107. spectrofluorimetric, 3388. deposits on platinum, determination, 4687. spectrophotometric, 3862. determination, 335, 3655. of mannitol in, 1485. flame photometric, 1296. fluorimetric, 406. meprobamate in, spectrophotometric, in ammonium fluoride, spectrophotometric, 407. 3402. in beryllium, spectrophotometric, 4154. of mucoprotein in, polarographic, 4962. in boric acid, 1687. of 17-oxosteroids in, chromatographic, 2909. spectrophotometric, 3656. of phospholipids in, 5362. in boric esters, 3661. i.r. spectrophotometric, 1499 in borohydrides, 4688. of P in, 3393, 5362 in B alloys, 5168. spectrophotometric, 5350. in B₄C, 5168. of K in, by atomic absorption spectroscopy, or BN, by X-ray diffraction, 908. 5342. in cast iron and stainless steel, spectrographic, flame spectrophotometric, 1467. spectrophotometric, 5343. in coke, spectrographic, 910. in glass, 1687. X-ray spectrographic, 4901. of properdin in, 4963. in graphite, by reactivity change, 3103. of psicofuranine in, spectrophotometric, 3406. spectrographic, 910. of quinine oxidase in, 4988. spectrophotometric, 1297. of salicylate in, u.v. spectrophotometric, 208. in iron, 3749. of Na in, 1842, 4897. in Fe alloys, spectrographic, 1005. by atomic absorption spectroscopy, 5342. in natural water, 2496. flame spectrophotometric, 1467. in niobium, spectrographic, 2174. in organic compounds, 559, 1687, 4316. of sorbitol in, 1485. of sphingomyelin in, i.r. spectrophotometric, in plants, 3010. 1499. photometric, 5047. in porcelain enamel frits, 5170. of streptococcal antihyaluronidase in, 3940. of Sr in, flame spectrophotometric, 3869. in presence of barium, 2088. of 35S in, by liquid scintillation counting, of Zr, 1299. 4906. in rocks, photometric, 1298. of triglycerides in, 5360. in silicon, photometric, 4701. of urea in, 3387. in steel, 532, 1007, 3658, 3748, 3749, 4277. spectrophotometric, 3411, 4408. photometric, 1757 of uric acid in, spectrophotometric, 1487. in thorium, spectrophotometric, 4154. of water in, 3857, 4394. in uranium, 4154. spectrographic, 493. proteins, determination, comparison of methods in zirconium, spectrophotometric, 4154. for, electrophoretic, 2897. spectrophotometric, 229, 2396. in zirconium diboride, 5195. in zirconium hydride, 2087. dye-binding of, 677 of 10B, in minerals, radiochemical, 909. salt separation of, 676. spectrophotometric, 49, 1294, 3657, 4152. electrophoretic control of, 675. separation, electrophoretic, 1145, 1146, 1208, phenyl deriv. of, determination, 4853. separation, from alloys and other materials, 3154. 1513, 3914, 3915, 4962, 5378, 5381. from silicate, 4153. u.v. spectrophotometric, 1510. separation of lipoproteins in, paper electrofrom uranium, 1300. of traces of, by ion exchange, 1295. phoretic, 5382. Boron, alkyl deriv. of, de-alkylation of, 4837. starch gel electrophoresis of, 4978. Boron carbide, determination of B in, by X-ray diffraction, 908. Body fluids, analysis of, apparatus for, 801. Boiler water. (See Water, boiler.) Boron hydrides, detection of traces, in air, spectro-Bone, determination of Ca in, 894. photometric, apparatus for, 2089. flame spectrophotometric, 5345. determination of B in, 4688. of Mg in, 3144. trialkyl, analysis of, mass spectrometric, 2790. of radioactivity in, spectrochemical, 4526. Bourbonal, determination, oscillographic, 3989. of 90Sr in, 637, 638. Brain, determination of NH, in, 211. of Sr in, spectrographic, 42, 4398. of choline phosphates in, by ion exchange, flame spectrophotometric, 5345. wet oxidation of, 1841. of ethanolamine phosphates in, by ion exchange, Boranes. (See Boron hydrides.) 3897.

of serine phosphates, in, by ion exchange,

3897.

Borate, determination, in ethanediol antifreeze,

B.S.I. method for, 1106.

Brandy, analysis of, 2465.

determination of fusel oil in, gas chromatographic, 1933.

Brass, analysis of, 351.

spectrographic, 1272.

detection of trace metals in, spectrographic, 4667. determination of Al in, 5171.

of Cu in, amperometric, 3126. polarographic, 1699.

spectrophotometric, 1270. of Pb in, polarographic, 1699.

of Zn in, spectrophotometric, 1270.

lead-, determination of Pb in, polarographic, 3691.

Bread, detection of malt in, 1173.

determination of aroma-producing substances in, 3982.

of Carbowax in, 5434.

of polyoxyethylene glycol esters in, chromatographic, 2973.

of thiamine in, 4499. of thiols in, 1562.

Bricks, analysis of, 2661.

Brilliant Black BN. (See Dyes, C.I. Food Black 1.) Brine, determination of Br in, spectrophotometric, 995.

of I in, spectrophotometric, 995.

of Hg in, 5167.

polarographic, 1589.

of V in, spectrographic, 1333.

Bromate, detection, 1345. determination, 122.

in presence of periodate, iodate and chlorate, 3739.

Bromide, determination, 4771.

in brine, spectrophotometric, 995.

in natural water, 1187, 1954. spectrographic, 1186. spectrophotometric, 2494.

in presence of chloride and iodide, spectrophotometric, 2221.

Bromine, determination, coulometric, 511.

in biological material, by activation analysis, 2870.

in organic compounds, 559, 4806, 5265.

in selenium, spectrophotometric, 474.

in uranium fluorides, spectrophotometric, 117. in uranium oxides, spectrophotometric, 117. potentiometric, 994.

Bromine chloride, use of, in determination of maleic and fumaric acids, 3807.

of synthetic polyester resins, 3807. Bromine fluorides, analysis of, in mixtures with UF₆, by nuclear magnetic resonance, 126.

Bromoacetic acid, determination, 181. in wine, chromatographic, 2990.

1-p-Bromophenyl-3-dimethylamino-1:2-pyridylpro-

pane. (See Ilvin.)

Bromosulphonephthalein, determination, in serum, spectrophotometric, 2366.

Bromtetracycline, determination, in tetracycline, photometric, 4454.

Bromthion, detection and determination, polarographic, 790.

Bromural. (See Bromvaletone.)

Bromvaletone, determination, coulometric, 253. Bronze, aluminium-, determination of Al and O in,

analysis of, 351.

determination of Al in, 3666, 5171.

of Be in, electrometric, 3640. of Cu in, spectrophotometric, 1270.

of Fe in, photometric, 4784.

of Pb in, 1657.

Bronze, determination-continued of Zn in, 1657.

spectrophotometric, 1270.

Brookite, determination of Sb in, polarographic, 1321.

of Cu in, polarographic, 1321.

Broom, determination of alkaloids in, paper chromatographic, 3950.

Brucine, determination, spectrophotometric, 3463, 5404.

use of, as indicator, 2599.

Buffer solutions, importance of ionisation of, 3598. use of tetramethylammonium hydroxide in, 341.

Burette, automatic stopcock turner for, 1195. for constant delivery-rate, 1598. for drop-volumes of 10-3 ml, 795.

precision, use of, 5065. simple devices for, 3544.

weight-, 294.

Burner, for coal gas, with coupled gas and air supply, 1218.

Butane, analysis of hydrocarbons from hydrogenation process, gas chromatographic, 566.

Butane-1: 4-diol, analysis of, i.r. spectrophotometric, 1785.

Butanol, determination, in tributyl phosphate, 2787.

isoButene, analysis of reaction products from the hydroformylation of, gas chromatographic, 2264

cis-But-2-ene, determination, spectrophotometric, 2754.

cis-But-2-ene-1: 4-diol, analysis of, i.r. spectrophotometric, 1785.

Butethamine, determination as tetraphenylborate,

Butex, methods for the inspection of, 2588.

Butobarbitone, identification, in blood, u.v. spectrophotometric, 252.

Butter, analysis of, spectrophotometric, 5431. chemistry and analysis of, review, 5022.

Butter fat, determination, 2454. fatty-acid composition of, 271.

separation and identification of high-mol.-wt. satd. fatty acids in, 272.

Buttermilk, determination of fat in, 3504.

tert .- Butoxy group, determination of i.r. absorption regions of, 4816.

Butyl acetate, determination of water in, 1423. Butyl alcohol, determination, spectrophotometric, 4821.

iso-, separation, from ethanol, gas chromatographic, 2465.

separation, from isooctyl alcohol, chromatographic, 3801.

tert-, analysis of, effect of some organic solvents

determination, in presence of primary and secondary alcohols, 5269. turbidimetric, 178.

cycloButyl compounds, i.r. spectra of, 4349.

Butyl hydroperoxide, tert.-, detection, 4321. 2-sec.-Butyl-4:6-dinitrophenol, determination, in mixtures, paper chromatographic, 4036.

Butylated hydroxyanisole, detection, in fats, 3513. determination, in lard, spectrophotometric, 1565. separation, paper chromatographic, 1579.

Butylated hydroxytoluene, separation, paper chromatographic, 1579.

determination, i.r. spectrophoto-Butylbenzene, metric, 591.

i.r. data for, 1803.

n-, i.r. data of, 2302.

p-tert.-Butylbenzoic acid, determination, in synthetic resins, spectrophotometric, 1463.

n-Butyl y-(2:4-dichlorophenoxy) butyrate, determination, in plant material, i.r. spectrographic,

Butyl methacrylate, determination, in poly(butyl methacrylate), polarographic, 1098.

isoButyl methyl ketone, use of, in extraction of Be,

Mg and Zn, 4109.

Butyl phthalate, determination, in nitrocellulose, 5337

Butyl rubber, i.r. data of, 2351. n-Butyl titanate, determination of Ti in, 4713.

tert .- Butyltoluene, determination, i.r. spectrophotometric, 5295.

Butyl xanthate, determination, nephelometric, 1073. But-2-yne-1:4-diol, analysis of, i.r. spectrophotometric, 1785.

Butyraldehydes, determination, gas chromato-graphic, 577.

CDTMP. (See cycloHexanediaminetetramethylphosphonic acid.)

CHEL-242, use of, in complexometric analysis, 3102.

CIPC. (See Chlorpropham.)

Cacao, determination of shell in products of, 1570. Cacao butter, detection of adulterants in, 2461. Cadion, use of, in determination of Cd, spectro-

photometric, 4149. Cadmium, determination, 862, 2053, 2637, 3127,

3153, 4149, 5165. by cementation with magnesium, 864.

in aluminium, spectrophotometric, 4161.

in brass, 905.

in bronze, 905.

in Cr - Ni alloys, 3652

in copper, polarographic, 3139. in hydrofluoric acid, spectrophotometric, 357.

in hydrogen peroxide, spectrophotometric, 357.

in Mg alloys, 1685. in marcasite, 1656.

in nickel, spectrophotometric, 3270.

in niobium, spectrographic, 2173.

in presence of Zn, electrolytic, 2055.

in pyrites, 1656.

in silicon, spectrographic, 924.

in solder, 1682.

in thallium, spectrographic, 2057.

in uranium oxide, spectrographic, 1292, 5234. in zinc, by neutron activation analysis, 3102.

of Cu in, 3134.

of Pb in, polarographic, 4684.

of Th in, polarographic, 4684.

of Zn in, polarographic, 1289, 4148.

polarographic, 3653.

spectrographic, 866.

with cadion, spectrophotometric, 4149. with EDTA, methylene blue as indicator in, 4650.

with Rhodamine B, spectrophotometric, 1684. separation, by ion exchange, 4683.

from Bi and Cu, paper chromatographic, 2528. from Bi, Cu, Hg and Pb, paper chromato-graphic, 2052, 2614.

from Cu and Zn, 1254.

from In and Zn, by ion exchange, 3167. from Tl, In and Zn, electrolytic, 1658.

from Zn, by ion exchange, 3651.

electrolytic, 1291. of radioactive, 1290. Cadmium alloys, analysis of, 3618.

determination of Cu and Pb in Cd - Fe, polarographic, 28.

Cadmium anthranilate, determination, in feeding-stuffs, spectrophotometric, 788.

Cadmium 8-hydroxyquinolinate, spectrophotometric stability of, on filter-paper, 4647.

Cadmium sulphate, analysis of, spectrographic, 401. Cadmium sulphide, determination of Cl and Ag in, radiochemical, 2031.

Caesium, composition of ppt. of, with KBiI₄, 1663. determination, 1664, 1666, 3133. and separation of ¹³⁷Cs from ⁹⁰Sr, 2031.

conductimetric, 369, 4663.

in minerals, spectrographic, 1265. in natural water, by electrodialysis, 1956.

in presence of other alkali metals, 1665. of K and Rb, 1264.

in rocks, spectrographic, 1265.

in silicates, spectrographic, 2622. in urine, 4090.

of 187Cs in natural water, 283.

potentiometric, 4122

radiochemical, 2621, 5148.

spectrographic, 873.

separation and determination, reagents for, 1662. from fission products, 370, 3103.

from K, 1266.

from Rb, by ion exchange, 5147.

Caffeine, determination, 255, 1541, 1549, 1898, 3809. 5407, 5408.

by ion exchange, 2435.

photometric, 5399.

spectrophotometric, 1888, 4453.

identification, in animal tissue, 4405. separation from theobromine and theophylline

and determination, spectrophotometric, 2427. Cakes, determination of polyoxyethylene glycol esters in, chromatographic, 2973.

Calcein, use of, as indicator, 21.

Calcein blue, use of, as metalfluorechromic indicator, 5131.

Calciferol. (See also Cholecalciferol; Ergocalciferol.) aetio-, halochromy and halofluorescence of, 1524.

Calcite, determination, in rocks, 1034.

of Sr in, spectrophotometric, 3150. Calcium, detection, 2494.

determination, 395, 396, 1253, 1280, 3642, 4196.

amperometric, 36. apparatus for, 3576.

by ion exchange, 1744.

complexometric, masking agent for, 3148. flame photometric, 366, 2620, 3638, 5161.

elimination of interferences in, 37. flame spectrophotometric, 5162.

in aluminium, 3161. in Al - Ca - Si alloys, 4140.

in Babbitt metal, spectrographic, 2066.

in basic slag, 2744. in bauxite, 3161.

in biological materials, 3868.

flame photometric, influence of anions on, in blood plasma, 1471, 5019.

flame photometric, 3390.

in blood serum, 1109, 1110, 1471, 2031, 3864, 3865, 4397.

by atomic absorption spectroscopy, 4900.

flame photometric, 635, 1467.

flame spectrophotometric, 2356.

simultaneously with Sr, flame spectrophotometric, 3869.

use of metallochromic indicators in, 3866.

X-ray spectrographic, 4901.

Calcium oxide, determination-continued Calcium, determination-continued in bone, flame spectrophotometric, 5345. in magnesite, flame spectrophotometric, 1674. in bovine serum, flame photometric, 635. in slag, 39. in cane sugar juice, spectrophotometric, 4472. Calcium resinate, analysis of, review, 628. in cast iron, flame spectrophotometric, 531. Calcium sulphate, determination, in gypsum and Plaster of Paris, by ion exchange, 2635. in c.s.f., 4397. in faeces, 639. Calcium superphosphate, determination of sulphate in food, 639. in, 962, 2499. in glass, paper chromatographic, 368. sampling of, water absorption in, 1965. in hydrogen peroxide, spectrographic, 356. Calculations, slide-rule for converting percentages to in lead, 1675. mole fractions, 291. in manganese, spectrographic, 1347. in milk, 5019. Calculi, identification, i.r. spectrophotometric, 1481. Calibration curves, measurements without, 1233. Calorimetry, reading of thermometers in, 2573. in natural water, 4024, 5475. spectrophotometric, 4023. in nickel and its alloys, 3269. in ointments, radiometric, 4467. in phosphoric acid, 1282. in plant tissue, by automatic titration, 1472. spectrographic, 1843. in plants, u.v. spectrophotometric, 636. in Portland cement, radiometric, 4674. in presence of Mg, 2633. potentiometric, 5159. of phosphate, 894. of Sr, 397. in slag, spectrophotometric, 1271. in sodium chloride, 1281. in sodium iodide, spectrographic, 996. in soil, flame photometric, 4523. with Acid alizarin black SN, 3535. in steel, 3756. in sugar, flame spectrophotometric, 259. in sulphated castor oil, 620. in sulphite liquor, by ion exchange, 2334. in titanium slag, 1676. in tomatoes and tomato juice, flame photometric, 3506. in tungsten, flame photometric, 110. in tungsten oxides, flame photometric, 110. in uranium, flame photometric, 335. in urine, 1471, 3389, 4396, 4397. flame photometric, 1467. simultaneously with Sr, flame spectrophotometric, 3869. in wine, 748. indicators for, 2602, 4098, 4113, 4650, 4675. of Al in, 38 of Cu in, 38. of Li in, spectrographic, 896. of Na in, flame photometric, 365. of Si in, 38. paper chromatographic, 3643. polarographic, 2078. radiochemical, 1284, 2634.

identification, 893.

4140.

with azo compounds, 3601.

from Sc, electrolytic, 1693. from Sr, 41, 2031.

Calcium fluoride, analysis of, 895.

spectrographic, 1283.

photometric, 365.

lepidolite, by ion exchange, 5160.

paper chromatographic, 3626.

conditions for the combustion of fuels in, Camphene, determination, 2840. Camphor, determination, gas chromatographic, 3461, 4364. pectrophotometric, 4363. (+)-Camphor-10-sulphonic acid, spectrophotometric, 610. determination, Canavanine, determination, in leguminosae, spectrophotometric, 4432. Candelilla wax, analysis of, 1853.
Cannabis indica, identification of cannabinol in, paper chromatographic, 5000.
Cannabinol, identification, in hashish, paper chromatographic, 5000. Capillary analysis, review, 3106. Caprolactam, e-, determination determination, potentiometric, 4390 oligomers of, determination, paper chromatographic, 1099. Capsaicin, determination, in capsicum, 2432. chromatographic, 1159. Capsicum, determination of capsaicin in, 2432. chromatographic, 1159. Captan, detection, chromatographic, 4533. identification and determination, fluorimetric, 2504 Carbarsone, determination, by activation analysis, 3488 Carbazole, determination, spectrophotometric, 3349. Carbides, analysis of, 1388. determination of Ta in, spectrographic, 5216. Carbohydrates, determination, 189, 4928. in grass, 1122. in serum, paper electrophoretic, 5380. paper electrophoresis of, 1411, 1787. separation, paper chromatographic, 3308, 4413. Carbon, detection, 1397. determination, 2111, 2112. in beryllium, absorptiometric, 2587. in biological tissues, 3860. with photometric end-point detection, 35. in blood, 3860. in cast iron, gasometric, 1758. spectrographic, 138, 3261. influence of V on flame emission of, 5161. spectrophotometric, 2234. radiogenic, isolation of, from mica, muscovite and in chromium carbide, 2710. in coal, 4372 separation, from Ba and Sr, 398.
from K, Mg and Na, in biological materials, in coke, 4372. in copolymers, 4387. in iron alloys, 533. spectrographic, 863. in nitro compounds, 4306. in organic compounds, 1398, 1399, 1400, 2251, 3102, 3595, 3797, 3780, 3781, 3782, 3783, 3793, 4301, 4302, 4303, 4304, 4305, 4307 of 45Ca from other radio-isotopes, 3620. Calcium alloys, determination of Ca, in Ca - Al - Si, 5262, 5264. Calcium hydride, determination of Na in, flame gas chromatographic, 4302, 4303. simultaneously with H, 1047. Calcium oxide, determination, in fluxed agglomerate, and halogens, 552. and N. 551.

Carbon, determination-continued in steel, 1009. gasometric, 1758. simultaneously with S, 4280. spectrographic, 138, 3261. in uranium, 4765. in zirconium and zirconium alloys, 2141. in zirconium diboride, 5195. of 14C, gas chromatographic, 5496. in milk, by liquid scintillation counter, 5521. in organic compounds, 564. in proteins, 3916. on paper chromatograms, by solid scintillation-counting technique, 1660. routine counting of, 2657. of impurities in, spectrophotometric, 2116. of radioactivity of, methods for, review, 3099. organic, determination, in soil, 4524. Carbon black, determination of S in, 953. Carbon dioxide, absorption of, by soda asbestos and soda lime, 2516. detection, in air, apparatus for, 5470. determination, coulometric, 4184. in biological fluids, 5340. in blood, 4896. in carbonates and silicates, 163. in gases, with spectrophotometric end-point detection, 65. in liquids and tissue, 2874. apparatus for, 798. in natural water, 775, 5477. in soil, 1188. in wine, 2989. method for application in industry, 2031. of 14CO2, by liquid scintillation counting, 2113. of O in, mass spectrometric, 4185. with Haldane's apparatus, simplification of, 4551 luminescence spectra of, 3612. Carbon disulphide, determination, 3213, 5183, 5184 in air, apparatus for, automatic, 280. in gases, u.v. spectrophotometric, 956. C-methyl groups, determination, 1776. Carbon monoxide, detection, 4697. apparatus for, 4597. determination, 2115. in air, 5471. in biological tissue, gas chromatographic, 5341. in blood, gas chromatographic, 5341. in dichlorodifluoromethane, gas chromatographic, 570. in gases, 2031. in hydrogen, 4698.

graphic, 570.
in gases, 2031.
in hydrogen, 4698.
spectrophotometric, 3678.
of O in, mass spectrometric, 4185.
photometric, 2114.

Carbon tetrachloride, analysis of, gas chromatographic, 568.

Carbonate, determination, in biological solids, 1480.
in limestone, thermogravimetric, 5046.
in soil, 3014, 3015, 3016.
thermogravimetric, 5046.

Carbonatite, determination of Cu in, 1668.
Carbonyl compounds, analysis of, chromatographic, 295.

determination, 2031. spectrophotometric, 2276. identification, 2031.

Carbonyl groups, determination, 561, 2261. review, 1776.

Carbowax, determination, in bread, 5434.

Carboxylic acids, analysis of, 3313. anhydrides of, determination, 581. review, 580. aromatic, analysis of, mass spectrometric, 3335. chlorides of, determination, 581, 5284. determination, 581, 1418, 1419, 3314. flash exchange gas chromatographic, 4825. review, 580. dibasic, separation, chromatographic, 3318. study of, mass spectrometric, 4336. halides of, determination, 581. identification, 3315. mass spectra of, 5283. phenolic, identification, chromatographic, 5359. polyhydroxy, detection, 4822 separation, chromatographic, 172, 582, 806, 5280. 2-Carboxymethoxy-5-methylbenzoic acid, use of, in determination of Th and Zr, 2682. Carboxypeptidase, determination, in duodenal juice, spectrophotometric, 4983. -A, determination, spectrophotometric, 3937.

o-Carboxyphenylazochromotropic acid, use of, in analysis, 340, 5203.

o-Carboxyphenylazo-1:8-dihydroxynaphthalene3:8-disulphonic acid. (See o-Carboxyphenyl-

3:6-disulphonic acid. (See o-Carboxyphenylazochromotropic acid.)

Carbromal, determination, coulometric, 253.

Carbromal, determination, coulometric, 253.
separation, from phenobarbitone, chromatographic, 3963.
Carbutamide, determination, 2439.

Carnauba wax, analysis of, 1853. Carnitine, separation, electrophoretic, 4941. Carotene, determination, 5454.

in grass, spectrophotometric, 1851. in *Ulex europaeus*, u.v. spectrophotometric, 782. review, 2965.

Carotenoids, determination, 2882. paper chromatographic, 2377. spectrophotometric, 2883.

Carvone, determination, polarographic, 2841. Caryophyllene, gas chromatography of, 1393. Cascara sagrada, determination of anthraquinones in, 2430.

Casein, electrophoresis of, 4476, 5379. hydrolysates, determination of L-phenylalanine in, 3434.

Castor oil, detection, in vegetable or animal oils, spectrophotometric, 1941. determination, of fatty acids in, paper chromatographic, 2998.

sulphated, determination of Ca, Fe and Mg in, 620. Catalysts, analysis of, by X-ray diffraction, 3744.

determination of Al in, 4157. of fluoride in, 4259.

of Pt in, X-ray spectrographic, 1384. reforming, determination of Cl, Pt and S in, 3772.

Catechins, detection and determination, in foods, paper chromatographic, 1912. determination, in wattle-bark, paper chromato-

graphic, 3854.

Catechol, determination, spectrophotometric, 4847.
 separation, by ion exchange, 2307.
 Catecholamines. (See also Adrenaline; Noradrena-

line.) determination, 4938. fluorimetric, 4938.

in blood, spectrofluorimetric, 662. spectrophotometric, 4938. in plasma, 4938. in urine, spectrophotometric, 4938.

in urine, spectrophotometric, 4938 with trihydroxyindole, 4938. symposium on, 4938.

Cations, detection, on paper chromatograms, 3037. Cellulase, determination of activity of, 3932. Cellulose, carboxymethyl-, Na salt, determination, 1095.

β- and γ-, determination, in rayon, comparison of methods for, 198.

destruction of, with periodic acid, 5139. determination of carbonyl groups in, 2332

radiometric, 4823.
of structural characteristics of, i.r. spectrophotometric, 4332.

of xanthate in, 2846. nitrate esters of, determination of thermograms of, apparatus for, 321.

Cellulose acetate, determination, in propellents, 1103.

separation, paper chromatographic, 2337.

Cement, Portland, analysis of, apparatus for, 3576.

by combined X-ray and chemical method, 1769.

determination of Ca in, radiometric, 4674. of Cr in, 1726.

of Mg in, radiometric, 4674.

of oxides in, spectrographic, 2249. of V in, spectrophotometric, 1715.

Cementite, analysis of, in steel, 5250. determination, in iron, 4787.

Ceramics, i.r. spectrophotometry of, 3278 Cereals, determination of moisture in, 3979.

of nicotinic acid in, spectrophotometric, 1947. of Tl in, spectrophotometric, 2869. of thiamine in, 4499.

Cerebrosides, determination, in brain, gas chromato-graphic, 5366.

Cerebrospinal fluid, determination of amino acids in. 3427

photometric, 3899 of a-amino nitrogen in, 3427.

of anthranilic acid and deriv. in, paper chromatographic, 1506.

of Ca in, 4397.

of free and total cholesterol in, fluorimetric and spectrophotometric, 2406.

of fructose in, 4926.

of y-globulin in, spectrophotometric, 4961.

of glucose in, 4926.

of a-keto acids in, spectrophotometric, 1850. of kynurenic acid and kynurenine in, paper chromatographic, 1506.

of Mg in, 4397.

of meprobamate in, spectrophotometric, 3402. of a-oxoglutaric acid in, spectrophotometric,

1491. of proteins in, 3919.

photometric, 3440. spectrophotometric, 4961.

of pyruvic acid in, spectrophotometric, 1491,

of sialic acids in, spectrophotometric, 4926

of xanthurenic acid in, paper chromatographic, 1506

Ceric oxide, determination of Pr in, radiochemical,

Ceric sulphate, oxidation mechanism of, in presence of chromate, 4639.

Cerium, detection, in biological tissue, 4401. determination, 57, 1253, 2655, 2656, 3196.

coulometric, 511. in fluorides, spectrophotometric, 335.

in mixture with Fe, coulometric, 1748.

in presence of Fe and La, spectrophotometric, 421

in rare-earth oxides, 420.

in samarium oxide, radiochemical, 4106.

Cerium. determination-continued

in soln., in presence of other elements, spectro-graphic, 1252.

in uranium alloys, spectrophotometric, 335.

of 144Ce, in natural water, 283.

spectrophotometric, 60, 4178, 4692, 4693.

reaction of, with peroxysulphuric acid, 419. separation, from La, Pr, Sr and Y, by focusing ion exchange, 4115.

from Th, by ion exchange, 1703.

with alginic acid as cation exchanger, 4727. Cetylpyridinium chloride, determination, 1395.

Chalcocite, determination, in copper minerals, 2627. Chalcones, detection, with isoniazid, 3888 Chalcopyrite, analysis of, X-ray diffractometric, 3775.

determination, in copper minerals, 2627.

of Cu in, 378.

Chancelavine, detection, by u.v. fluorescence, 3468. Cheese, determination of ash in, 1175. of fat in, 263, 3504.

of salt in, 1918.

Chicory, determination of inulin in, 2976. Chiniofon, identification, 3951.

Chloral hydrate, determination of H₂O in, 1661. Chloramine T, determination, 122. Chloramphenicol determination, 708, 5001.

spectrophotometric, 5307. u.v. spectrophotometric, 729.

Chloranil, detection, spectrophotometric, 2797. Chlorate, determination, in chlorinated lime, potentiometric, 504.

in presence of perchlorate, 507, 4772 of periodate, bromate and iodate, 3739.

Chlorates, analytical study of, i.r. absorptiometric,

Chlordane, detection, in natural water, i.r. spectrophotometric, 2497.

Chloride, automatic titration unit for, 3029. determination, 128, 1395, 1742, 3596, 4771.

in beer, by ion exchange, 2984. in chlorinated lime, potentiometric, 504.

in ethanediol, 2763. in ethylene oxide, 2760.

in glass, spectrophotometric, 2250.

in hydrogen peroxide, spectrophotometric, 2220.

in milk, 733.

potentiometric, 5020.

in natural water, 1953. indicator for, 282.

in plasma, potentiometric, 1114. in serum, potentiometric, 1114.

in sulphite liquor, by ion exchange, 3242.

in urine, spectrophotometric, 2360.

potentiometric, 505.

Chlorine, determination, in air, spectrophotometric, 770.

in beryllium, 506.

in biological material, by activation analysis, 2870.

in cadmium sulphide, radiochemical, 2031.

in coal, B.S.I. method for, 616. in gases, apparatus for, 292.

in hydrocarbons, 1818.

in industrial wastes, 1590.

spectrophotometric, 2493. in natural water, spectrographic, 1186.

in organic compounds, 559, 1775, 2253, 2256, 3290, 4315, 4806, 5265. flame spectrophotometric, 1404.

in petroleum, by X-ray fluorescence, 3360. in plasticisers, 4383.

in polymers, 4383, 4384.

Chlorine, determination-continued

in polyurethane plastics, spectrophotometric, 3382

in reforming catalysts, 3772.

in silanes, 2256.

in silicate rocks, 3241.

in thorium, 506. in uranium, 506.

in wood, paper pulp and paper, 3373. in zinc sulphide, radiochemical, 2031.

of active, in chlorinated lime, potentiometric, 504.

with Variamine blue as indicator, 3604.

Chlorine dioxide, determination, in natural water, spectrophotometric, 3006.

Chlorite, determination, 122.

Chlorobenzaldehydes, vibrational spectra of, 5302. Chlorobenzene, analysis of, i.r. spectrophotometric,

radiometric, 4300.

determination, in air, automatic, apparatus for,

1-Chlorobutane, analysis of, gas chromatographic,

Chlorodifluoromethane, analysis of products of pyrolysis of, gas chromatographic and mass spectrometric, 569.

determination of water in, i.r. spectrophotometric,

Chloroform, analysis of, gas chromatographic, 568. determination, i.r. spectrophotometric, 5423. reaction of bases with, 1409, 3301.

3-Chloro-10-{3-[4-(2-hydroxyethyl)-1-piperazine] propyl}-phenothiazine. (See Decentan.

5-Chloro-8-hydroxy-7-iodoquinoline, determination,

separation from 8-hydroxyquinoline, paper chromatographic, 725.

5-Chloro-2-hydroxy-3-sulphophenylazoresorcinol, use of, in determination of Ga, fluorimetric,

6-Chloro-8-mercaptoquinoline disulphide, use of, in detection of Cu, 3138.

O-3-Chloro-4-methyl-2-oxo-2H-1-benzopyran-7-yl-

OO-diethyl phosphorothioate. (See Co-Ral.)
4-Chloro-2-methylphenoxyacetic acid, determination,

in mixtures, paper chromatographic, 4036. separation, chromatographic, 5052

4-(4-Chloro-2-methylphenoxy) butyric acid, determination, in plant material, i.r. spectrophotometric, 1978.

Chloromethylumbelliferone, determination, spectrophotometric, 4534. Chloronitronaphthalenes, separation, paper chroma-

tographic, 3347. Chlorophenoselenazine, analytical applications of,

3-Chlorophenyl carbamate. (See Chlorpropham. 2-p-Chlorophenyl-3-methylbutane-2:3-diol. Phenaglycodol.

S-(p-Chlorophenylthio) methyl OO-diethylphosphorodithioate.] (See Trithion.)

Chlorophyll, determination, paper chromatographic, 3419

Chloroquine phosphate, assay, spectrophotometric, influence of slit width on, 700.

Chlorosulphonic acid, analysis of, 4234. Chlorothiazide, determination, spectrophotometric,

3484. identification, 5008.

5-Chloro-2: 2':4'-trihydroxyazobenzene-3-sulphonic acid, use of, in determination of Ga, 4164.

Chloroundecafluorocyclohexane, analysis of, gas chromatographic, 3735.

Chloroxylenes, photomicrography and crystallography of, 1078.

-Chloro-3:5-xylenol, determination, u.v. spectrophotometric, 729.

Chlorpromazine, determination, 3486, 3972. comparison of methods for, 4460.

identification, 3951. Chlorpropamide, determination, 2439.

in plasma, spectrophotometric, 4912.

Chlorpropham (CIPC), determination, in potatoes 791.

Chlortetracycline, determination, in tetracycline, photometric, 4454.

spectrophotometric, 712. identification, photometric, 1895. Chlorthiazide, determination, 1909.

Chlorthion, detection and determination, polaro-graphic, 790.

Chocolate, detection of adulterants in, 2461.

determination of fatty adulterants of the coconut oil group in, paper chromatographic, 2460. Cholecalciferol. (See also Calciferol.)

determination, 1944.

Cholesterol, analysis of, gas chromatographic, 5386. determination, 4974.

comparison of methods for, 1521.

in blood, 1522, 2902, 3448. in plasma, 1522.

spectrophotometric, 4437.

in serum, 1522, 3449. comparison of methods for, 5387. effect of vitamin A on, 2409.

electrophoretic, 1148.

spectrophotometric, 1877, 2405, 3924, 4437, 4972.

of free and esterified, in serum, 1147.

of free and total, in blood, 4973.

in c.s.f., fluorimetric and spectrophoto-metric, 2406.

spectrophotometric, 2408. u.v. spectrophotometric, 687.

Cholesterol esterase, assay of, manometric, 5391. Cholesteryl esters, oscillographic polarography of,

separation, by silicic acid chromatography, 1523. from plasma, 2407.

Cholic acid, determination, in deoxycholic acid, spectrophotometric, 1878.

Choline, determination, comparison of methods for, 1854. in serum, 220.

phosphate esters of, determination, in brain, and spinal cord, by ion exchange, 3897.

Choline dehydrogenase, determination, 1530. Cholinesterase, determination, 4985. in blood, 1154.

in serum, 5392.

starch gel electrophoresis of, in serum, 4978.

Chondroitinsulphuric acid, detection, in urine, 4924. determination of glucosamine in, 661.

Chromate, determination, 865.

Chromathermography. (See Chromatography, gas.) Chromatography, applications to analysis of benzenoid compounds, 593.

electrolytic, a new method, 3551.

fundamental developments in, review, 5125. improvements in, 5491.

of inorganic compounds, review, 1249. of larger molecules, 3102.

thin-layer, application to toxicology, 3976. Chromatography, column, apparatus for, 5075. for back-washing of, 1197.

continuous monitoring of radioactive effluents from, 2524.

Chromatography, gas-continued sources of error in, 3044.

nylon, 815, 3559.

3560.

5086.

effect of, 4562.

stationary phases for, alkylarylsulphonate as,

use of, for petroleum analysis, 2537.

controlling factors in separation by, 5088.

efficiency of 3047, 4058, 4559, 4561, 5089.

coated capillary columns, coiled glass as, 4563.

control of temp. of, by movable heater,

Chromatography, column—continued detection by heats of absorption, 1609. determination of concn. of eluate, polarographic device to control bubbles and voids in, 3554. drop counter for, 296, 2525. feeding device for, 1602. fraction-collector for, 1198, 1990, 5074. automatic, 804. improvements to, 5073. i.r. cell for collecting fractions in, 3036. method for increasing the rate of elution in, 1989. on paper-discs, 298. salting out, technique for, 5084. separation of cations by, 3552. study of double-fronting phenomenon in, 2522. cyanate in, 4048. variable solvent programmes for, 3553. Chromatography, gas, advances in, 3043, 5125. analyser and recorder for, 1610. for, 1997. of gases from metals by, 3556. anomalous calibration curves in, 3054. apparatus for, 1996. with linear temp. programmer, 3045. applications of, 302. to pharmaceutical analysis, 3461. review, 2532. automatic, 3105. column efficiency in, 4058. constant-flow device for, 1611. 4565. detectors for, 1202, 1203, 1614. biological objects as, 1615. cathode ray, 4062. flame ionisation, 3051. high-temp. seal for, 4567. ionisation, 4060, 5497. use of Ar in, 2533. of 147Pm as source of β-rays, 1998. thermal conductivity, accuracy of, 4564. effect of carrier gas on, 820. katharometers for, 818, 819. sensitivity of, 3561. response of cells in, 5093. of catalytic combustion for, 5095. determination of 14C by, 5496. of impurities in gases by, 4059.

of combined columns as, 3046. of silica gel as, 3050, 3558. equilibration of, apparatus for, 4057. formation of volatile esters on, 4560. heater for, 5090. use of tetra-(4-methylpyridino)-nickel dithiopolyesters as liquid, 816. safrole as liquid, 5495 selectivity of liquid, 817. sucrose diacetate hexaisobutyrate as, 5091. analysis of flowing gases by, automatic apparatus supports for, 2539, 5494. symposium on, 5085. system for separating samples with wide or narrow b.p. range, 2536. technique of, 813. for micro-analysis, 811. theoretical plates in, 5087. thermal conductivity of binary gas mixtures, 3561 trap for liquid fractions in, 1205. use of gaseous phase as eluting gas in, 2534. of He as carrier gas in, 3049. detection of organic compounds by, 1393, 2535, of molecular sieves as substractors in, 5092. of two or more internal standards in, 3048. with an impure carrier, 812. Chromatography, paper, apparatus for, 1603. for application of liquids, 805. for determination of Rp values, 809. ascending, technique for, 299. automatic recording densitometer for, 2530. scanner for, 301. centrifugal acceleration in, apparatus for, 5076. chamber with simple thermal shield for, 2529. constant-temp. explosion-proof cabinet for, 1993. correlation between ester formation of acidalcohol mixtures and RF values in, 3041. de-salting in, 4051. use of a.c. potentials for excitation of, 5116. determination of radioactivity in, simple apparatus for, 3100. of spot area in, 4055. drying oven for, 810. of integrated activity of a slug of gas, counter eluter for, 5079, 5080. cell for, 5094. equilibration device for, 4556. of surface area by, 2541. evaluation in, by monochromatic u.v. radiation, effect of sample size in, 1201. 1606. fraction collector for, device for smoke elimination by reflectance measurements, 1994. in, 3052. photometric, 300. fluorescent intensification screens for, 5081. high-temp., apparatus for, 814. influence of pressure gradients on resolution in, Geiger counter for use in, 3098. horizontal, equipment and technique for, 1991. 9538 integrator device for, 5096. interpretation of multiple zones and spots in, measurement of curves in, statistical evaluation of, 5493. ionic changes caused by paper in, 1605. metal separation by, 1612. modification of "Agla" hypodermic syringe for method for concentrating ions for, 3038. micro-applicator for, 4050. use in, 2540. multisheet frame for, 4049. proposals for standardisation of nomenclature for of inorganic ions, 3102. retention values in, 1995. preservation of chromatograms, 5082. range changer for use in, automatic, 4061. quant. evaluation in, without elution, 2526. reduction of tailing in, 1613. radiometric measurement in, 2031. registration of fractions in, use of a mercury-drop automatic recording for, 5083. potentiometer for, 4566. sample injection in, 303, 1204, 4558. resolution in, improvement of, 1604. review, 3106.

Chromatography, paper-continued separation of anions by, 4646.

of coloured reaction products by, followed by spectrophotometry, 2031.
of ions by, apparatus for, 1992.

slit-feeding apparatus for, 4557.

solubilisation of organic compounds in, 172.

spot distribution and size in, 3555.

technique for comparison chromatograms, 807. for detecting spots in, 1608.

titrimetric finish in, 3102.

use of a single-crystal CdS cell in, as sensitive probe, 1607. of "Elatography" in, 5492.

of solvent front indicators in, 808.

with chromatostrips, effect of shape of strips in, 806.

zone location in, 4054. migration in, 5077.

Chromato-polarography, determination and separa-tion of traces of organic substances by, 3102.

Chrome-magnesite, decomposition of, 3277. Chrome ores, determination of Fe in, 2118. of silica in, 2118.

Chromic acid, separation, by ion exchange, 2195. Chromic anhydride, radioactive, use of, in determination of Cr in aluminium black, 2031.

Chromite (mineral), analysis of, 480.

Chromium, analysis of, spectrographic, 2194. detection, spectrographic, 18.

determination, 21, 1339, 1725, 5226.

by X-ray fluorescence, 134.

in aluminium alloys, polarographic, 3220. in aluminium black, radiometric, 2031.

in aq. soln. used in the tanning industry, 5334.

in beryllium, absorptiometric, 2587.

in chrome ores, 4540.

in meteorites, by neutron activation analysis, 3776.

in mixtures with Fe, U and V, potentiometric, 116.

in nickel, spectrophotometric, 3221.

in plasma, spectrographic, 1108.

in Portland cement, 1726.

in presence of Al, 1301. in steel, 143, 4789.

spectrophotometric, 2233.

in titanium alloys, spectrographic, 863.

in tungsten steel, 1761.

in Zircaloy, 4208. spectrographic, 2146.

in zirconium, 4208. of Al in, 3743.

of Cu in, photometric, 376.

of Fe in, 3743.

of O in, 3222, 3716.

potentiometric, 4241.

spectrophotometric, 965, 3219.

u.v. spectrophotometric, 478. extraction of, from acid soln., by tri-n-octylphosphine oxide, 3110.

separation, from Al and Fe, paper chromatographic, 2614.

from Co, Fe, Mo, Nb, Ni, Ta, Ti and W, in a high-temp. alloy, by ion exchange, 2056.

Chromium alloys, determination of Sb in Cr - Ni, 4222.

of Cd, in Cr - Ni, 3652.

interferences in flame photometry, in the Cr - Co -Mn system 2031.

Chromium carbide, determination of C in, 2710. Chromium(III) oxide, determination, 1725. Chromium-plating solutions. (See Electroplating

solutions.)

Chromogene black ET-OO. (See Dyes, C.I. Mordant Black 11.)

Chromones, determination, 3348.
Chromotropic acid, deriv. of, reagents for Be, 890.
Chromoxane blue R. (See Dyes, C.I. Mordant Blue 42.)
Chromoxane brown 5R. (See Dyes, C.I. Mordant Brown 26.)

Chronopotentiometry, use of a dropping mercury electrode in, 2578.

Chymotrypsin, determination, spectrophotometric, 3459

Cinchocaine, determination as tetraphenylborate. u.v. and i.r. spectra of, 720. polarographic, 5005.

electrophoretic behaviour of, 3967.

Cinchona alkaloids, determination, as reineckates, 1886.

oscillopolarographic, 4449.

Cinchonine, determination, spectrophotometric.

Cinchophen, in mixtures with salicylic acid, separation and determination, electrophoretic, 1165. Cinnamic acid, determination, 2503.

Citicide, detection, 2508.

Citral, determination, in volatile oils, spectrophotometric, 3846. Citric acid, determination, 1492, 1793, 2281, 2776.

oxidation of mixtures of, with oxalic acid, 4827. paper chromatography of, use of electrometric contact method in, 1416.

isoCitric acid, detection, paper chromatographic, 2374.

Citrin, determination of hesperidin in, spectrophotometric, 656.

of eriodictin in, spectrophotometric, 656.

Citronellol, determination, 3370.

Civet oil, analysis of, 4876.

Clayine alkaloids, paper chromatography of, 3468. Clay, analysis of, 2661.

spectrographic, 1387. determination of Al in, 1035.

X-ray fluorescence spectrographic, 1386.

of Fe in, X-ray fluorescence spectrographic, 1386.

of ion exchange capacity of, 3773.

of Si in, X-ray fluorescence spectrographic, 1386. of Ti in, 1035.

Clinical analysis, use of statistics in, 849.

Coal, brown, determination of moisture in, by highfrequency heating, 2832.

destruction of, with periodic acid, 5139. determination of ash in, radiometric, 4373.

of benzenepolycarboxylic acids in, after oxidation, 4374.

of C in, 4372

of Cl in, B.S.I. method for, 616.

of F in, spectrophotometric, 5317.

of Ge in, 69.

spectrophotometric, 68.

of gross calorific value of, B.S.I. amendment for, 5316.

of H in, 4372

of moisture in, 870. apparatus for, 592.

of O in, 1091.

of P in, B.S.I. method for, 2831.

of quartz in, i.r. spectrophotometric, 1038.

of S in, 1823.

of trace elements in, spectrographic, 194, 2246. of volatile matter in, 2833.

sampling of, B.S.I. specification for, 2830.

wet oxidation of, 1396.

Coal ash, analysis of, B.S.I. methods for, 3842. determination of Ge in, 429.

Coal ash, determination, of Ge in, -- continued polarographic, 427. spectrographic, 428.

Coal gas, burner for, with coupled gas and air supply, 1218. Coal tar, analysis of, gas chromatographic, 2834,

of hydrocarbons in, 3364.

determination of acidic constituents in, 1445. of acids and bases in, 3366.

of phenolic hydroxyl groups in, 1053.

of phenols in, 1835.

identification of phenols in, 4867.

separation of quinoline bases and hydrocarbons in, 5318.

Cobalamin. (See Vitamin B12-)

Cobalt, analysis of, spectrographic, 1373.

detection, 2735.

determination, 21, 1018, 1023, 1762, 1763, 2736, 3120, 3265, 3266, 3267, 3763, 3765, 3767, 4284, 4285, 4650, 4790, 5251, 5252, 5254. amperometric, 1020, 3126.

in alloys, 541.

in aluminium and its alloys, spectrophotometric, 542.

in biological tissue, by activation analysis, 1474. in cobalt matte and concentrates, flame photometric, 1358.

in high-alloy- and stainless steel, 3762. in neutron-activated corrosion products, 3103. in nickel, 1751.

spectrographic, 2239.

in nickel alloys, spectrophotometric, 3768.

in presence of Cu and Ni, 1022. spectrophotometric, 543.

of Ni, 153. spectrophotometric, 149.

in rocks, radiochemical, 2031.

in silicates, 1374.

in sodium, spectrophotometric, 151, 2238.

in steel, spectrophotometric, 3768. in tissue, radiochemical, 2363, 2871. in wine, 2470.

in zinc electroplating soln., photometric, 1288. of 60Co, by y-counting, 1021.

of Cu in, photometric, 376.

of Ni in, spectrophotometric, 2242.

of S in, spectrophotometric, 3758.

photometric, 4286. polarographic, 1019.

potentiometric, 5253.

radiometric, 2738.

simultaneously with Cu and Ni, spectrophotometric, 150.

spectrophotometric, 46, 1765, 2236, 2237, 2737, 3764, 4287

differentiation of metal, oxide and sulphide, 147. powder, analysis of, 146

separation, from Cu, 3267. and Ni, 1022.

from Mn, by ion exchange, 148.

from Ni, paper chromatographic, 152.

from other metals, in a high-temp. alloy, by ion exchange, 2056.

with tri-n-butyl phosphate, paper chromatographic, 4108.

use of azo dyes as reagents for, 1017.

of *omCo in neutron activation analysis, 1016. Cobalt alloys, interferences in flame photometry in Cr - Co - Mn system, 2031.

Cobalt 8-hydroxyquinolinate, spectrophotometric stability of, on filter-paper, 4647.

Cobalt tellurite, conductimetric and pH studies on,

Cobalt(II) oxide, determination of O surplus in,

Cobalt(III) oxide, analysis of, spectrographic, 1372. Cocaine, detection, oscillopolarographic, 1163. identification, 2918.

pseudo-, detection, 3462.

Cocos, analysis of, standard method for, 1911. determination of shell in, 1570.

Codeine, determination, chromatographic, 4992. coulometric, 2920.

separation, from other drugs, by ion exchange, 3965.

chromatographic, 3489.

Coenzyme A, determination, microbiological, 3933. Coffee, analysis of mixtures with chicory and other substitutes, 274.

detection of mineral oil in, 5026. determination of mannans in, 3511.

Coke. (See also Petroleum coke.)

determination of B in, spectrographic, 910. of C in, 4372.

of gross calorific value of, B.S.I. amendment for, 5316.

of H in, 4372.

of moisture in, by high-frequency heating, 2832.

of P in, B.S.I. method for, 2831. of V in, spectrophotometric, 1715.

of volatile matter in, 2833

study of combustion of, 2822. Coke ash, analysis of, B.S.I. methods for, 3842. Coke oven gas, detection of nitrogen oxides in, automatic apparatus for, 3367.

determination of H2S in, 1092 Colchicine, assay of, spectrophotometric, 4453. Collagen, determination, in leather, from hydroxy-

proline content, 1466. separation, from elastin, 2966.

Colorimetry, apparatus for, 5510. comparison of commercial instruments for, 2011. recording apparatus for use in analysis, 2523.

Combustion, use of glass bomb in, 5512.
Complexone IV. (See 1:2-Diaminocyclohexane-NNN'N'-tetra-acetic acid.)

Complexones, analysis of, zonal electrophoretic and polarographic, 1800.

application to analysis, 4649.

relationship between metal complex stability and structure, 3609.

Conductivity, electrolytic, determination, 16131. Conium, assay, paper chromatographic, 3949. Copolymers, determination, i.r. spectrophotometric, 2345.

of C in, 4387.

of H in, 4387.

ethylene - propylene, analysis, mass spectro-metric, 3380.

poly(vinyl chloride) - poly(vinyl acetate), analysis of, i.r. spectrophotometric, 3381

styrene - butadiene, determination, photometric, 1100.

vinyl cyanide - methylvinylpyridine, analysis of, 2341.

Copper, analysis of, polarographic, 5140.

chelates of, of phthalic acid, stability of, 2031. composition of complexes with phenyl-2-pyridylmethanol, 2031.

detection, 371, 3138, 3628.

in internal organs, paper chromatographic, 3977.

spectrographic, 18.

determination, 16, 21, 371, 372, 373, 862, 880, 1253, 1267, 1268, 1667, 2031, 2053, 2071, 3136, 3630, 3633, 3825, 4124, 4127, 4665.

Copper, determination-continued

Copper, determination-continued amperometric, 2068, 3137, 3629. by cementation with magnesium, 864. by electrolysis, potentiostat for, 5122. by phosphor poisoning, 1643. by radiometric titration, 3650. conductimetric, 5150. coulometric, 2069. in aluminium, spectrophotometric, 3632. and its alloys, 2624, 4125. in ammonium fluoride, polarographic, 358. in ammonium salts, 3134. in arsenic, by ion exchange, 3202. in beryllium, 32. absorptiometric, 2587. spectrophotometric, 5158. in beryllium compounds, 393. in beryllium oxide, spectrophotometric, 5158. in blood, 1478. in brass, amperometric, 3126. polarographic, 1699. spectrophotometric, 1270. in bronze, spectrophotometric, 1270. in cadmium, 3134. in Cd - Fe alloys, polarographic, 28. in calcium, 38. in carbonatite, 1668. in cast iron, 2230. in chalcopyrites, 378. in cobalt matte and concentrates, flame photometric, 1358. in copper alloys, 351. electrolytic, 3616. spectrophotometric, 374. in Duralumin, amperometric, 3126. in feeding-stuffs, 4527. in fluorides, 377. in glass, 4126. in hops, 1928. in hydrofluoric acid, polarographic, 358. in indium arsenide, polarographic, 3672. in iron, with oxalyldihydrazide, 4125. in iron alloys, spectrographic, 4270. in lead, spectrographic, 2669 with oxalyldihydrazide, 4125. in magnesium and its alloys, 4125. in manganese, spectrographic, 1347. in marcasite, 1656. in metals, with tetraethylthiuram disulphide, 2070. in natural water, 4517. by ion exchange, 1698. in nickel, polarographic, 5255. spectrographic, 2239. with oxalyldihydrazide, 4125. in nickel alloys, 4126. in organic substances, polarographic, 4104. in pharmaceutical preparations, 2957. in plants, polarographic, 5352. spectrographic, 5044. in plasma, spectrographic, 1108. in presence of amino compounds, 2625. of Bi, 2055. of Co and Ni, spectrophotometric, 543. of Fe, polarographic, 1655. of Mn, 1669. of Hg, 375. polarographic, 907. of Zn, 884. in proteins, 5384. in pyrites, 1656, 2626.

in rocks, radiochemical, 2031.

spectrophotometric, 204, 4898, 4899.

in serum, 5344.

in silver, 4129. spectrographic, 1274. in silver nitrate, 4129. in slag, spectrophotometric, 1271. X-ray spectrographic, 4666. in soil, 4400. chromatographic, 286. in spirits, 4490. spectrophotometric, 2472. in steel, 2230, 4125. photometric, 3756. spectrophotometric, 3632. in thallium, spectrographic, 2057. in Th - U alloy, 335. in tin, 4125. polarographic, 4192. in titanium, 4125. in titanium dioxide, polarographic, 1321. in uranium, 4125. spectrophotometric, 1739. in urine, 1478. in zinc, 3134, 4125 in zinc alloys, 4126. in Zircaloy, spectrographic, 2140. in zirconium, 4125. spectrographic, 2140. of Cd in, polarographic, 3139. of Pb in, 4195. polarographic, 930, 3139. of Ni in, polarographic, 1766. of Ag in, by atomic absorption spectrophotometry, 5153. of thickness of, on a metal base, spectrophotometric, 2628. of Sn in, spectrophotometric, 1315. paper chromatographic, 886, 4288. photometric, 376, 883. polarographic, 379, 882, 1255. pulse polarographic, 3617. radiochemical, 9, 885. simultaneously with Co and Ni, spectrophotometric, 150. with Fe, in aluminium, by cathode ray polarography, 5177. with Ni, in steel, spectrophotometric, 3258. with U, in minerals, radiochemical, 4130. spectrophotometric, 339, 352, 1269, 1667, 3135, 3628, 4125, 4128, 4151, 5149, 5151. phase analysis of metal and compounds, 881. separation, from Bi, electrolytic, 2072. from Cd and Bi, paper chromatographic, 2528. from Cd and Zn, 1254. from Cd, Hg, Pb and Bi, paper chromatographic, 2052, 2614. from Au and Ag, paper chromatographic, 380. from Fe, Mo and Ni, in yttrium, 2109. from Hg, by ion exchange, 27. from Ni, Co and Cd, chromatographic, 4111. with tri-n-butyl phosphate, paper chromatographic, 4108. Copper alloys, analysis of, 1657. of Cu - Al, X-ray fluorescent spectrometric, 3669. spectrographic, 2733. determination of Al in, 3159. of BeO in, 3142. of Cu in, spectrophotometric, 374. of Cu, Ni and Zn in, electrolytic, 3616. of Pb in, spectrophotometric, 432. of P in, B.S.I. method for, photometric, 5152. of Si in, B.S.I. method for, photometric, 5152.

Copper alloys, determination-continued

of Ag in, amperometric, 4133. of Te in, polarographic, 1724. of Sn in, B.S.I. method for, 5152. spectrophotometric, 1315, 2667.

Copper 8-hydroxyquinolinate, determination, in textiles, spectrophotometric, 4038. spectrophotometric stability of, on filter-paper,

4647

Copper matte, determination of Pb and Zn in, polarographic, 931.

Copper ores, determination of Ag in, by ion exchange, 5154.

phase analysis of, 2627.

Copper phthalocyaninetetrasulphonic acid, use of, as redox indicator, 22.

Co-Ral, determination, spectrophotometric, 4534. Cotarnine chloride, analysis of, spectrofluorimetric,

Corticosteroids, determination, in human urine, review, 1152.

in plasma and urine, 3457.

17-hydroxy-, determination, in plasma, 3927. in serum, chromatographic, 2909. identification, paper chromatographic, 5389.

separation, from 17-oxosteroids, in biological materials, 686. paper chromatographic, 235, 3456.

Corticosterone, determination, in rat plasma and adrenals, fluorimetric, 692.

Cortisol. (See Hydrocortisone.) Cortisone, determination, 3923.

in urine, 1526. paper chromatographic, 5389. spectrophotometric, 4455.

i.r. spectra of, 243.

oscillographic polarography of, 2903. separation, from aldosterone and cortisol, paper

chromatographic, 717. from deoxycortisone, Na salicylate and amino acids, paper chromatographic, 716 Cosmetics, analysis of, 4878.

containing zinc peroxide, determination of O in,

Cotton, analysis of mixtures with viscose rayon, 1831, 3376.

Cottonseed, determination of lysine in, spectrophotometric, 3537.

of malathion in, 1593.

Cottonseed oil, determination of iodine value of, 5030.

Coulometer, micro-, photometric iodine, 327.

Coumarinic acid, analysis of, spectrophotometric,

Countercurrent extraction, apparatus for, 802, 5488.

Creatine, determination, 4940. in urine, 2391. spectrophotometric, 3460.

Creatine kinase, determination of activity of, spectrophotometric, 3460, 5393.

Creatine phosphate, determination, 4940.

Creatine phosphokinase. (See Creatine kinase.) Creatinine, determination, in urine, 2391.

Creosote, determination of coke residue in, 5319. Cresol, determination, 1431.

separation, from xylene and toluidine, gas chromaatographic, 3329.

Cresotic acid, 2:6-, and 2:5-, use of, in determination of Th and Zr, 2151, 2682.

Crucibles, zirconium, use of, in determination of Cr in chrome ores, 4540.

Crude fibre. (See Fibre, crude.)

Cryolite, analysis of, 3276.

determination of fluoride in, 3239. potentiometric, 125.

Crystallisation, progress in 1958, 2033.

Cuprite, determination, in copper minerals, 2627. Cyanate, determination, in industrial wastes, photometric, 1590.

isoCyanate groups, determination, 3296. Cyanide, determination, 2051, 2658, 4150, 4186.

in apples, 3505.

in biological materials, 4908. in fish, spectrophotometric, 3503.

in industrial wastes, 1590, 3533.

in natural water, polarographic, 4027. in presence of NH₄+, NO₃- and NO₃-, 451. of Ni, spectrophotometric, 920.

photometric, 2031 polarographic, 5186. spectrographic, 5185.

spectrophotometric, 921, 3679. Cyanides, organic. (See Nitriles.)

Cyanoacetic acid, determination, in biological tissue, spectrophotometric, 4440.

Cyanoacetic acid hydrazide, determination, potentio-

metric, 2293.

Cyanocobalamin, determination, in vitamin B₁₃ prepn., 1543. Cyanogen chloride, determination, in industrial

wastes, 1590.

Cyanohydrins, determination, 2294. Cyanuric chloride, determination, 4535.

Cylinders, graduated measuring, B.S.I. amendment for, 3543.

Cyclobarbitone, determination, coulometric, 254. identification, in blood, u.v. spectrophotometric,

252. Cyclohexane. (See cycloHexane.) Cycloheximide, determination, spectrophotometric,

724. Cymene. determination, i.r. spectrophotometric, 5295.

o-, i.r. data of, 2302.

Cynarin, determination, spectrophotometric, 1544. Cysteamine, determination, polarographic, 2895.
Cysteic acid, determination, in protein hydrolysates, paper electrophoretic, 1140.

Cysteine, detection, 1139.

determination, 5374. Cystine, detection, in urine, radioautographic, 3909. determination, 5373. photometric, 1865.

spectrophotometric, 4953.

Cytochrome c, use of, in determination of succinate,

2,4-D. (See 2:4-Dichlorophenoxyacetic acid.)
2,4-DB. [See γ-(2:4-Dichlorophenoxy)butyric acid.]
D & C Red 36. (See Dyes, C.I. Pigment Red 4.)

DDD, detection, in natural water, i.r. spectrographic,

2497

DDT, detection, in natural water, i.r. spectrographic, determination, in food, spectrophotometric, 1171.

in milk, paper chromatographic, 4474.

DDT-dehydrochlorinase, assay, spectrophotometric,

DFP. (See Diisopropyl phosphonofluoridate.)
DSNADNS, use of, as reagent for Th, spectrophotometric, 4725.

Decaborane, determination, 3156.

Decalin, gas chromatography of, 1393.

Decamethonium compounds, detection, 2948. Decarboxylase, amino acid, assay of, spectrophotometric, 3938.

bacterial, use of, in analysis of molasses, 1561. uroporphyrinogen, determination, spectrophotometric, 3936.

Decentan, separation, from other drugs, chromatographic, 3489.

Dehydracetic acid, detection and identification,

paper chromatographic, 1569. Dehydroascorbic acid, determin determination, in food, photometric, 5466. reduction of, with H2S, 5468.

7-Dehydrocholesterol, determination, spectrophotometric, 2031.

Dehydroepiandrosterone. (See Androst-5-en-17-one.) Dehydrogenase, assay of, 1883.

isocitric, determination of activity of, in body fluids, 4984.

lactic, determination of activity of, 4979.

Delnay, determination of 2:3-p-dioxandithiol SS-bis-(OO-diethyl phosphorodithioate) in, 1895.

Densitometer, automatic, for use in paper chromatography, 3042. differential, for use in absorption spectrophoto-

metry, 2554.

photo-electric, for direct-reading, 831. simple helium, 5062.

Density, bottles for, B.S.I. amendment for, 4543. Deoxybenzoin, separation, paper chromatographic,

Deoxycholic acid, determination of cholic acid in, spectrophotometric, 1878.

Deoxycorticosterone, oscillographic polarography of, 2903.

Deoxycortisone, separation, from cortisone, Na salicylate and amino acids, paper chromatographic, 716.

Deoxyribonuclease, determination of activity of, turbidimetric, 240.

Deoxyribonucleic acid, determination, spectrophotometric, 667.

Detergents. (See also Quaternary ammonium compounds; Surface active agents.)

analysis of, by ion exchange, 2837. review, 1446.

anionic, determination, 4870. in water and sewage, spectrophotometric, 1957.

determination, 4869.

separation of surface active agents in, 4871.

of alkanolamides and alkanolamines in, paper chromatographic, 1448.

of 1-aminopropan-2-ol from, paper chromatographic, 1448.

of ethanolamines from, paper chromatographic, 1448

Deuterium, determination, in helium, gas chromatographic, 335, 2617. in hydrogen, gas chromatographic, 23.

spectrographic, 869. in organic compounds, 4299.

in water, chromatographic, 4656. Deuterium oxide, determination, in water, apparatus for, 1185.

i.r. spectrophotometric, 4696. Deuterohaemin, determination, spectrophotometric,

Deuteron activation, micro determinations by, 2031. Dexamethasone, determination, paper chromatographic, 5389.

Dexamphetamine, identification, 1901.

Dextran, determination, in cane sugar, 2446.

Dextrosulphenidol, determination, spectrophotometric, 3970.

Diabase, determination of Nb in, 3712. Diacetyl. determination, 1796, 4335.

Diacetylmonoxime-2:4-dinitrophenylhydrazone, use of, in determination of Co, 3763.

Diacridyl derivatives, use of, as luminescent indicators, 5.

Dialkyldiboranes, analysis of, mass spectrometric, 3812

Dialysis, study of membranes for, 2031. 3:3'-Diaminobenzidine, use of, in determination

of Se, spectrophotometric, 4236.

1:2-Di-(2-aminoethoxy)ethane-NNN'N'-tetra-acetic acid (AEGT), use of, in determination of Co, spectrophotometric, 2236. of Cu, spectrophotometric, 1667.

of metal cations, 4649.

of V, spectrophotometric, 3711.

Diaminoglyoxime, use of, in determination of Co and Ni, spectrophotometric, 4287.

1:2-Diaminocyclohexane, determination, in hexamethylenediamine, polarographic, 1077 1:2-Diaminocyclohexane-NNN'N'-tetra-acetic

(ADCT), use of, in analysis, 373, 1667, 4649, 5151, 5245.

Di-[3-(8-amino-1-hydroxy-3:6-disulpho-2-naphthylazo)-4-hydroxyphenyl] sulphone, use of, in determination of Sc, 3169.

3:3-Di-(p-aminophenyl) butan-2-one, determination, polarographic, 5009

Diamorphine, detection, 4446. identification, 3951.

Dianisidine, determination. spectrophotometric, 3822

o-, use of, as indicator, in determination of Bi, 2692 in determination of Ce, 421.

1:1-Dianthrimide, use of, in determination of B in boric acid, spectrophotometric, 3656.

Diantipyrinylbutane, use of, in determination of Tl, spectrophotometric, 2650.

Diantipyrinylmethane, use of, in determination of Tl, 56, 2650.

2:7-Di-(o-arsonophenylazo)-1:8-dihydroxynaphtha-lene-3:6-disulphonic acid. (See Arsenazo III.) Diastatic power, determination, of malt extract,

1179. Diazinon, determination, in olive oil, spectrophotometric, 5448.

Diazo salts, use of, as chromatographic spray reagents, 4052.

1:2-Dibromoethane, determination, in soil, 5049. Dibucaine, detection, 3462.

Dibutyl phthalate, determination, in propellents, spectrophotometric, 3385.

1:4-Di-caffeylquinic acid. (See Cynarin.) Dicarboxylic acids. (See also Carboxylic acids.) analysis of, paper chromatographic, 1795. determination, 2283.

2-NN-Di(carboxymethyl)aminomethylquinizarin, use of, as metallochromic indicator, for Ca, 4675.

6:8-Dichlorobenzoyleneurea, applications of, analytical and biochemical, 2031.

2:4-Dichloro-6-o-chloroanilino-sym.-triazine. (See Dyrene.)

Dichloroisocyanuric acid, determination of germicidal activity of, 1976.

1:1-Dichloro-2:2-di-(p-chlorophenyl)ethane, determination, in plant extracts, spectrophotometric, 1594.

88'-Dichlorodiethyl ether, determination. dichloroethane, i.r. spectrophotometric, 563. 1:1-Dichloro-2:2-di-(p-ethylphenyl)ethane. (See

Dichlorodifluoromethane, determination, in fumigation mixtures with ethylene oxide, 1781 of CO, N and O in, gas chromatographic, 570. 1:3-Dichloro-5:5-dimethylhydantoin, determination

of germicidal activity of, 1976.

Dichloroethane, 1:2-, analysis of, gas chromato-graphic, 568.

determination of \$B'-dichlorodiethyl ether in. i.r. spectrophotometric, 563.

Di-(2-chloroethoxy) methane, analysis of, 4320.

2:4-Dichlorophenoxyacetic acid, analysis of, 5051. deriv. of, analysis of, i.r. spectrophotometric, 598. determination, in presence of 2:4:5-trichlorophenoxyacetic acid, 3540. eparation, from trichloroacetic acid, 3540.

4-(2:4-Dichlorophenoxy) butyric acid, determination, in plant material, i.r. spectrographic, 1978.

0-2:4-Dichlorophenyl-00-diethyl phosphorothioate,

(VC 13 Nemacide), determination, by cholinesterase inhibition, 2506.

6: 8-Dichloro-1: 4-(1H,3H) quinazolinedione. 6:8-Dichlorobenzoyleneurea.

Dichromates, determination, 4645.

Dickite, determination, in minerals, i.r. spectrophotometric, 4799.

Dicoumarol, separation, paper chromatographic, 2438.

Dicupral. (See Tetraethylthiuram disulphide.)

Dicyanobenzene, o-, m- and p-, analysis of mixtures of, i.r. spectrophotometric, 594.

Dicyanotoluene, isomer ratio in, analyser for, 1079. 2:2'-Di-(1:8-dihydroxy-3:6-disulpho-2-naphthyl-

azo)diarsonic acid. (See Arsenazo II.) Dieldrin, detection, 1973.

in natural water, i.r. spectrographic, 2497. determination, in olive oil, 792.

spectrophotometric, 793, 5057. Dielectric constant, apparatus for, use of, in analysis,

use of, in analysis, 4102.

Dienoestrol, determination, 1556.

Diethanolamine, separation from detergents, paper chromatographic, 1448.

Diethazine, determination, 3486.

1:1-Diethoxyethane, separation, from ethanol, gas chromatographic, 2465

Diethylamides, detection, 1168. p-Diethylaminoacetophenone, determination, 2310. Diethylaminoethylcellulose. use of, in column

chromatography, 2522. 1:3-Diethylbenzene, i.r. data of, 2302.

Diethyldithiocarbamic acid, diethylammonium salt, effect of mineral acids on, 2596

use of, in extraction of metals, 3614. Na salt, determination, 2786.

distribution coefficient for metal complexes with, 2611

Diethylene glycol, determination of other glycols in, gas chromatographic, 2764.

Diethylenetriaminepenta-acetic acid, use of, in determination of Cu, in presence of Bi, 2055. in titrations, 5134.

OO-Diethyl S-(ethylthio) methyl phosphorodithio-(See Phorate.)

Di-(2-ethylhexyl) sebacate, identification of 2-ethylhexyl hydrogen sebacate in, 184.

Di(ethylmercury) phosphate, separation and identification, paper chromatographic, 1971.

Diethyl phthalate, determination, gas chromatographic, 3461. in propellents, spectrophotometric, 3385.

Diffractometric analysis, direct quant., without internal standard, 3081.

Digitalis, determination of digitoxin in, chromatographic, 4998.

evaluation of, chemical, 1542.

Digitalis glycosides, determination, 3469. review of colorimetric methods, 2930.

i.r. absorption spectra of, 5410. Digitoxin, determination, in digitalis, chromato-

graphic, 4998.

Dihydrochlorothiazide, identification, 5008.

Dihydrocodeine, determination, chromatographic, Dihydroindanthrene, disodium disulphonate of, use

of, in detection of organic acids, 1790. Dihydromorphinone, determination.

graphic, 4992. Dihydroquercetin, use of, in determination of Mo,

in steel, spectrophotometric, 3760.

Dihydrostreptomycin, assay of, 708. photometric, 710.

Dihydroxyacetophenone (Resacetophenone), metal chelates of, composition of, 2031.

3:4-, separation, from catechol, paper chromatographic and electrophoretic, 1809. e of, in determination of B, 406.

1:8-Dihydroxy-2:1'-azonaphthalene-3:6:4'-trisulphonic acid, use of, in determination of Zr, 2674.

2:5-Dihydroxy-p-benzoquinone, use of, in determination of Th. 5201. of Zr, 5202.

6:7-Dihydroxy-2:4-diphenylbenzopyrylium chloride, use of, in determination of Ge, 4190

1:8-Dihydroxy-2-(8-hydroxy-3:6-disulphonaphthyl-azo)-naphthalene-3:6-disulphonic acid. (See DSNADNS.

1:8-Dihydroxy-2-(2-hydroxy-4-sulphonaphthylazo)naphthalene-3:6-disulphonic acid. (See OH-SNADNS.

Dihydroxymaleic acid, dihydroxylamine salt of, use of, in determination of Ti, 2125.

Dihydroxynaphthalene, 1:3-, use of, in determination of glucuronic acid, 651. 1:4-, determination, 3798.

2:2-Di-(p-hydroxyphenyl) propane, analysis of, paper chromatographic, 1081

8-Dihydroxy-2-(5-, 6-, and 8-sulphonaphthylazo)-naphthalene-3: 8-disulphonic acids. (See SNADNS.)

Di-iodohydroxyquinoline, determination, 1552, 2947. spectrophotometric, influence of slit width in.

Dilatometers, for highly viscous systems, recording and non-recording, 3025. Dilatometry, combined with thermal analysis,

apparatus for, 3582. 6:8-Dimercapto-octanoic acid, determination, in urine, spectrophotometric, 3416.

2:5-Dimercapto-1:3:4-thiadiazole, u.v. spectrum

of, 2819. 1:2-Di-(4-methoxy-o-benzoquinone-1-oxime-2-imino)ethylene, use of, in determination of

Co, Pd and Fe, 4285. Dimethoate. [See 00-Dimethyl S-(N-methylcarba-

movimethyl) phosphorothiolothionate.] p-Dimethylaminobenzylidenerhodanine, use of, in determination of Au, 4134.

of Ag, 3117. 2-Dimethylaminoethanol, determination, in animal

tissue, chromatographic, 1488. Dimethylbenzenes, determination, in benzonitrile, i.r. data for, 3328.

i.r. data for, 3327.

Dimethylbenzoic anhydrides, determination, i.r. data for, 3338

Dimethylbenzyl alcohols, determination, i.r. data for, 3333.

2:4-Dimethylbenzyl dimethylbenzoates, i.r. data of. 2308

2:2-Dimethylhexane-3:5-dione, use of, in determination of Be, 4136.

Dimethylhydrazine, determination, 5288. spectrophotometric, 5287.

OO-Dimethyl S-(N-methylcarbamoylmethyl) phosphorothiolothionate, determination, in Rogor, spectrophotometric, 5058.

Dimethylnitrosamine, determination, polarographic,

spectrophotometric, 5287.

2:3-Dimethyl-1-phenyl-4-pyrrolidino-5-pyrazolone, determination, in serum, photometric, 3405.

OO-Dimethyl phosphorothicate, detection and determination, polarographic, 790.
2:6-Dimethyl-4H-pyran-4-one, titration of, use of

photometric indicator in, 3809.

Dimethyl sulphone, i.r. spectrum of, 4832. Dimethyl terephthalate, determination of traces of

acids in, 4856.

Di-1-naphthylthiocarbazone, use of, in determination of Cu and Hg, 4151.

Dinas. (See Silica brick.)

Dinitro compounds, determination, spectrophotometric, 3340.

Dinitrobenzenes, colour reaction and absorption maxima of, 1811. 3:5-Dinitrobenzoic acid, identification, paper chroma-

tographic, 5273 2:4-Dinitrophenylhydrazones, separation, chromato-

graphic, 574 3:5-Dinitro-o-toluamide, determination, spectro-

photometric, 3823. Dinitrotoluene, colour reaction and absorption

maxima of, 1811. Dinoseb. (See 2-sec.-Butyl-4: 6-dinitrophenol.)

Dioctyl phthalate, determination, in propellents, spectrophotometric, 3385.

Diorite, determination of Mo in, spectrographic, 1340. Diosgenin, determination, 4417.

spectrophotometric, 685. 2:3-p-Dioxandithiol S8-bis-(OO-diethyl phosphorodi-thioate), determination, in Delnay, 1595.

Dioximes, determination, 1415. $\alpha\beta$ -Dioximinoacetoacetanilide. (See a B-Dioximinobutyranilide.)

αβ-Dioximinobutyranilide, use of, in analysis, 1028, 1376, 3630.

αβ-Dioximinobutyro-o-chloranilide, use of, in analysis, 3633, 3771.

αβ-Dioximinobutyro-o-toluidide, use of, in determination of Ni and Pd, 3268.

Dicyclopentadiene, determination, 3836. Dicyclopentadienyl iron. (See Ferrocenes.)

Dipentaerythritol hexanitrate, determination, 5335. in pentaerythritol tetranitrate, 2353.

Diperodon, identification, 2918. Diphenazonyl compounds. (See Diantipyrinyl com-

pounds.) Diphenhydramine, analytical behaviour of, 1903. Diphenyl, alkyl deriv. of, separation, chromato-

graphic, 4842. determination, spectrophotometric, 4352. i.r. spectrum of, 185, 4843.

Raman spectrum of, 185. Diphenylamine, determination, in trichloroethylene,

Diphenyldithiourea, use of, in determination of Pd,

Diphenyline, determination, spectrophotometric.

Diphenylmethanes, separation, from hydroxy-methylphenols, paper chromatographic, 5325. 4:7-Diphenyl-1:10-phenanthroline (bathophenan-

throline), use of, for determination of Fe, 1352. Diphenyls, analysis of, gas chromatographic, 2791. Diphenylthiovioluric acid, use of, in determination of Fe. 131.

Diphosphopyridine nucleotide, separation, electrophoretic, 2316.

Dipicrylamine. (See Hexanitrodiphenylamine.) determination, u.v. spectrophoto-Diprophylline.

metric, 5415. Diisopropyl phosphonofluoridate, determination of F in, 3289

8:8'-Diquinolyl disulphide, use of, in detection of Cu, 3628

NN'-Di(salicylidene) ethylenediamine, use of, in determination of Mg, 3146, 3147.

Disinfectants, determination of bactericidal power of, microbiological, 4470.

Distillation, apparatus for fractional, for use in emission spectrography, 5079. automatic apparatus for, 3033.

determination of reflux ratio and boil-up rate of apparatus for, 293.

improved apparatus for, 2518, 3549.

improvement to macro spinning-band columns for, 3031.

progress in 1958, 2033.

self-cleansing apparatus for, 2519. under reduced pressure, device for avoiding stoppages in, 1987. use of, in analysis, review, 5125.

Disulphides, determination, in beer, by electrolytic reduction, 3996.

Dithiocarbamates, di-substituted, effect of mineral acids on, 2596.

N-Dithiocarboxyaniline, determination, spectro-

photometric, 1142. 6:8-Dithio-octanoic acid (thioctic acid), determination, in urine, spectrophotometric, 3416.

Dithizone, and its metal complexes, structure of, 2031.

molar extinction coeff. of, 2031, 3687. stability of, in CCl4, 1645

Dithranol, determination, 726. Dolomite, determination, in rocks, 1034. of Sr in, spectrophotometric, 3150.

Dopamine, detection, 4938. Dough, determination of acidity in, 2964. of carotene in, review, 2965.

Drugs, determination, in non-aq. media, 1897.
of H₂O in, gas chromatographic, 1155.

Dulcin, determination, 3508.

Dulcitol, separation, paper chromatographic, 3308. Duodenal juice, determination of carboxypeptidase

in, spectrophotometric, 4983. Duralumin, determination of Cu in, amperometric, 3126.

Dust, analysis of, in air, radiochemical, 4512.

Dyes, azo, from chromotropic acid, use of, in analysis, 1.

from sulphonamides, use of, in analysis, 4631. detection, in food, paper chromatographic, 3509. determination, 4379

in beverages, 4479

paper chromatographic, 4480.

in food, 4479.

B.S.I. method for, 2970.

paper chromatographic, 1567, 1568, 3990, 4480, 5435.

in soln., chromatographic, 2842.

Dyes, determination-continued

of impurities in, paper chromatographic, 1639. on oranges, spectrophotometric, 5436. for use in food, separation and identification,

1922, 2462.

hair-, determination of p-phenylenediamine in, 3848.

identification of p-phenylenediamine in, 1826. hydroxytriphenylmethane, polarographic be-

haviour of, 4881. intermediates for, determination, paper chromatographic, 3039.

separation, from foods, paper electrophoretic, 2843. paper chromatographic, 1453, 5322

triphenylmethane, use of as indicators, 2598. use of, in detection of phenols or of aromatic

amines, 2331. in selective extraction, 860.

vegetable, identification, paper chromatographic,

water-soluble, analysis of, chromatographic, 4879, 4880. Dyes, listed under names given in the Colour Index

(Second Edition, 1956). C.I. Acid Blue I, determination, in soln., spectro-

photometric, 2842. C.I. Acid Blue 9, use of, as oxidation - reduction

indicator, 854. as indicator, in determination of ammonia, 4213

C.I. Acid Blue 147, as oxidation - reduction indicator, 854.

C.I. Acid Green 16, as oxidation - reduction indicator, 854.

I. Acid Orange 5, use of, as indicator, 255.

C.I. Acid Orange 10, binding of, as a measure of protein content, 2451.

C.I. Acid Violet 3, use of, in determination of B, 49.

C.I. Acid Yellow 3, determination in soln., spectrophotometric, 2842.

C.I. Acid Yellow 23, B.S.I. specification for, 2844. determination in soln., spectrophotometric, 2842

use of, in determination of Zr, 1322.

C.I. Azoic Coupling Component 2, X-ray powder diffraction data for, 1827.

C.I. Azoic Diazo Component 35, use of, as indicator, in determination of Cl-, 3604.

C.I. Basic Blue 1, use of, as indicator, in determination of fluoride, 2218.

C.I. Basic Blue 12, use of, as indicator, 255.

C.I. Basic Green 4, use of, as indicator, 255. C.I. Basic Red 2, use of, as indicator, 255.

in reductimetric volumetric analysis, with vanadium(II) sulphate, 2601.

C.I. Basic Violet 10, use of, in determination of Cd, spectrophotometric, 1684.

C.I. Basic Yellow 6, use of, as fluorescent indi-

C.I. Direct Blue 71, use of, in determination of Th. 5198.

C.I. Direct Violet 32, use of, in analysis of barbiturates, 1161.

C.I. Food Black 1, determination, in soln., spectrophotometric, 2842.

use of, in determination of keeping quality of milk, 1915.

Food Yellow 3, determination, in soln., spectrophotometric, 2842.

C.I. Mordant Black 1, use of, in determination of

C.I. Mordant Black 25, use of, in determination of Ca and Mg in soil, 3535.

Dyes, listed under names given in the Colour Index Second Edition, 1956) -continued

C.I. Mordant Black 38, use of, as indicator, in chelatometric titrations, 2043.

C.I. Mordant Blue 1, polarographic behaviour of,

C.I. Mordant Blue 3, use of, as indicator, 3116. in detection of Al, 50.

in determination of Al, in serum, by ion exchange, 4904.

spectrophotometric, 4903. of F-, in urine, 1113.

C.I. Mordant Blue 9, use of, in determination of Zr, polarographic, 2130.

of U and Zr. 1737. C.I. Mordant Blue 26, use of, in determination of Ca and Mg, in serum, 1110.

C.I. Mordant Blue 28, polarographic behaviour of,

C.I. Mordant Blue 32, use of, in detection of Sc, 3168.

C.I. Mordant Blue 42, polarographic behaviour of, 4881

C.I. Mordant Blue 44, use of, as indicator, 4. in determination of Ca, Mg and Mn, 4113.

Mordant Brown 26, polarographic behaviour of, 4881.

C.I. Mordant Green 15, use of, in determination of Mn and Zn, spectrophotometric, 4094. C.I. Mordant Green 34, use of, as reagent for Ca

and Mg. 2594. C.I. Mordant Violet 5, reaction of, with Al, 4155.

use of, in determination of Mo, spectrophotometric, 3224.

of Zr, spectrophotometric, 2673.
C.I. Mordant Yellow 1, use of, in determination of betaine, by ion exchange, 3497.

C.I. Pigment Red 4, determination of 2-naphthol in, spectrophotometric, 1454.

C.I. Solubilised Vat Blue 6, use of, as fluorescent indicator, 6.

C.I. Solvent Black 3, use of, in electrophoresis of serum, 1148.

C.I. Solvent Red 23, use of, as indicator, 255.

Dyrene, determination, 4535. spectrophotometric, 1974.

Dysprosium, determination of other rare-earth metals in, spectrographic, 2117.

EDTA. (See Ethylenediaminetetra-acetic acid.)

Ecgonine, identification, 2918.

Egg, determination, in food, spectrophotometric, 262

in "pasta all'uovo," spectrophotometric, 5016. Elastin, determination, 3444. spectrophotometric, 3443.

separation, from collagen, 2966.

Elatography. (See Chromatography, paper.) Electrical conductivity, apparatus for determination of, 4591

Electrical industry, application of micro-techniques in 3102.

Electrochromatography. (See also Electrophoresis.) continuous, method for, 4065

Electrodes, aluminium, use of in potentiometric analysis, 1634.

copper, use of, in potentiometric titrations, 4610. determination of O in, 5218.

dropping-mercury, behaviour in d.c. and a.c. polarography, 1221. for use in acetic acid solvent, 1636.

Electrodes-continued

glass, responsive to Na+, 3102.

graphite, preformed, use of, 4076.

hanging-mercury-drop, use of, in determination of inorg. ions, 3102.

in polarography, 322.

holder for, in controlled atmosphere, 1633. lead dioxide, use of, in acid - base titrations, 1223. mercury, influence of gold in, 3088. use of, in potentiometric titrations, 4610.

nickel, determination of O in, 5218.

polarised mercury, use of, in complexometric titrations, 326.

reference, for use in polarography, 5514.

rotated aluminium, use of, in determination of fluoride, 4769.

in volumetric analysis, 1635.

rotating-disc, theory and application of, 4595. use of mercury cathode, in polarography, having a constant and renewable surface, 5124.

Electrolytic analysis, cell for use with small vol., 3086.

of metals, 3616.

potentiostat for, 4592, 4593.

use of radioactive indicators in, 861.

Electron microscopy, fundamental developments in, review, 5125.

Electron probe micro-analysers, improvement in resolution of, 330.

Electrophoresis, apparatus for, 1206, 3055, 4063, 5097.

automatic registration of extinction curves, apparatus for, 4069.

fluid film, elimination of filter-paper wicks in, 1999.
immuno-, application to biochemical and clinical

problems, 3920.
of proteins, optimum conditions for, 821.

simplified method for, 1146.

trailing of albumin in, 4068.
of serum proteins, method for sub-fractionation

of serum proteins, method for sub-fractionatio in, 1208. oscilloscopic evaluation of, 5121.

principles and development of, 4064. quant. evaluation in, without elution, 2526. scanning in, 4067.

spectrophotometric, 1616. scanning instruments for use in, 301, 5498. simple non-gassing electrodes for use in, 4568.

starch-block, improved cutting device for, 1617. use of higher potentials in, and carrier for, 2542. starch column, apparatus for, 1207, 4070.

techniques and applications of, review, 4070. starch-gel, procedure for, 4071.

two-dimensional apparatus for, 822. use of organic buffers in, 4570. of separable column in, 823.

of tri(hydroxymethyl)methylamine as buffer in, 4066.

Electroplating solutions, analysis of, spectrographic,

chromium, determination of sulphate in, 105. determination of boric acid in, 3271.

of Mg and Ni in, 3272. of H₂SO₄ in, 958.

separation of Zn and Ni in, 904.

zinc, determination of Bi and Sb in, polarographic, 1287.

of Co and Ni in, photometric, 1288. spectrographic control of, 2084.

Eliamina Blue FFL. (See *Dyes*, C.I. Direct Blue 71.)
Elymoclavine, detection, by u.v. fluorescence, 3468.
Emetine, determination, in ipecacuanha, spectrophotometric, 3466.

Emodin, determination, spectrophotometric, 2932.
Enamels, determination of whiteness of, reflectometer for, 4087.

Endrin, detection, in natural water, i.r. spectrophotometric, 2497. determination, 4538.

Enzymes, cryst., optical rotatory dispersion of, 3442.

detection, paper chromatographic, 2414.

determination, variation of pH as a source of error in, 1527.

of the urea-cycle, determination, 1882. use of, in analysis, 337.

Ephedrine, detection, in urine, paper chromatographic, 1116.

determination, 2924. in presence of other drugs, 246. polarographic, 1537.

identification, 1901, 2918. N-methyl-, separation from other drugs, 3489.

Ephedrone, determination, 2924.

1:2-Epoxybutane, i.r. spectra of, 176.

Equilenin, oscillographic polarography of, 2903. Equilin, oscillographic polarography of, 2903. Erbium, determination of other rare-earth metals in, spectrographic, 2117.

Ergocalciferol. (See also Calciferol.) determination, chemical, 1944.

Ergometrine, detection, paper chromatographic, 1539.

Ergosterol, determination, spectrophotometric, 2031.
irradiated, analysis of, spectrophotometric, 3928.

separation, paper chromatographic, 4438.
Ergot alkaloids, detection, by u.v. fluorescence, 3468.
determination, 245, 2925.

separation, by ion exchange, 4993.

Ergotamine, determination, spectrophotometric, 4994.

Ergotaminine, determination, spectrophotometric,

4994.

Eriochrome azurol BC. (See Dyes, C.I. Mordant

Blue 1.)

Eriochrome black A. (See Dyes, C.I. Mordant Black

Eriochrome cyanine R. (See Dyes, C.I. Mordant Blue 3.)

Erioglaucine A. (See Dyes, C.I. Acid Blue 9.)

Erio green B. (See Dyes, C.I. Acid Green 16.)

Eriodictin, determination, in citrin, spectrophotometric, 656.

Erythrocytes, determination of neuraminic acid in, 5385.

Eserine. (See Physostigmine.)

Esterase, starch gel electrophoresis of, in serum, 4978.

Esters, aromatic, analysis of, mass spectrometric, 3335.

detection, 4822.

determination, review, 580.

of water in, photometric, 3311.

Ethacridine lactate, use of, as fluorescent indicator, 6. Ethanediol, determination, 1786. in biol. materials, spectrophotometric, 207.

in biol. materials, spectrophotometric, 207. in diethylene glycol, gas chromatographic, 2764. of chloride in, 2763.

separation, from n-pentanethiol, electrophoretic, 1060.

Ethanol, analysis of, gas chromatographic 2465, 3557.

of impurities in, 3815. determination, 1059, 2443, 4466. gas chromatographic, 5422. Ethanol, determination-continued

in blood, 2872.

gas chromatographic, 4908.

in body fluids, review, 206. in breath, apparatus for, 799. review, 206.

in galenical preparations, 2961.

in tissues, review, 206.

in urine, i.r. spectrophotometric, 1482.

in water, use of miscibility temp. in, 4589.

in wine, 1573.

of methanol in, 2266. polarographic, 2267.

study of, mass spectrometric, 4336.

Ethanolamine, determination, in lipid hydrolysates, spectrophotometric, 4952.

paper chromatographic, 3811.

phosphate esters of, determination, in brain and spinal cord, by ion exchange, 3897.

separation, from detergents, paper chromatographic, 1448.

Ethers, determination, 4324.

of water in, photometric, 3311. identification, 5270.

separation, chromatographic, 172.

Ethinyloestradiol, determination, simultaneously with methyltestosterone, spectrophotometric,

Ethoxy groups, determination, 1054, 2262.

separation, as alkyl iodides, from methoxy groups and determination, 1056.

-Ethoxyethanol, determination, 4328.

3-Ethoxy-4-hydroxybenzaldehyde. (See Bourbonal.) Ethyl acetate, determination, in mixtures with ethyl methyl ketone, spectrophotometric, 578. of H.O in, 1661.

separation, from ethanol, gas chromatographic, 2465

Ethyl alcohol. (See Ethanol.)

Ethyl biscoumacetate, separation, paper chromatographic, 2438.

Ethyl methyl ketone, determination, in mixtures with ethyl acetate, spectrophotometric, 578.

Ethyl sorbate, determination, mass spectrometric, 2777.

Ethylbenzene, determination, in ethylnitrobenzene,

1-Ethyl-2: 4-dinitrobenzene, determination, 3341. Ethylene, analysis of oxidation products of, gas chromatographic, 173.

determination, spectrophotometric, 2754.

Ethylene dibromide. (See 1:2-Dibromoethane.) Ethylene oxide, determination of acetaldehyde in, 2278.

of chloride in, 2760. Ethylenebisdithiocarbamic acid, determination of oxidation products in, paper chromatographic,

NN'-Ethylenediaminediacetic acid, determination in EDTA, polarographic, 2782.

Ethylenediaminetetra-acetic acid, action of oxidising agents on, 5133.

determination, amperometric, 587.

in presence of condensed phosphates, 2781. nitrilotriacetic acid in, polarographic, 1072.

potentiometric, 587.

u.v. spectrophotometric, 586.

use of, in analysis, 335.

NN'-Ethylenediglycine. (See Ethylenediaminediacetic acid.)

NN'-Ethylenedi-(4-methoxy-1:2-benzoquinone-1oxime-2-imine). (See 1:2-Di-(4-methoxy-obenzoquinone-1-oxime-2-imino) ethylene.)

2-Ethylhexyl hydrogen sebacate, identification, in di-(2-ethylhexyl) sebacate, 184.

Ethylmorphine, determination, coulometric, 2920. identification, 2918.

Ethylnitrobenzene, determination of ethyldinitrobenzene in, 3341.

3-Ethylphenoxyacetic acid, use of, in determination of Zr, 1323.

1-Ethylquinaldinium iodide, detection, spectrophotometric, 2797

2-Ethyl-4-thioureidopyridine, determination,

serum and urine, polarographic, 642. Ethyltoluenes, separation, chromatographic, 4350. Eupaverine, identification, 2918.

Europium, analysis of, spectrographic, 4183. determination, coulometric, 62.

in meteorites, by neutron activation analysis,

oscillopolarographic, 3179.

Evaporation, of solvents, apparatus for, 4045. Explosives, analysis of, in non-aq. media, potentiometric, 5336.

i.r. spectrophotometric, 4894.

determination, 5335. identification, 2865, 3386.

Extraction. (See also Countercurrent extraction.)

equilibria of, 3034, 3550, 4044. fusible reagents for, 338.

of inorganic compounds, theory of, 350.

solvent, apparatus for, 4043. in analysis of metals, 4643.

use of, with coloured cations, 860.

Faeces, analysis of, 3867.

determination of Ca in, 639.

of Mg in, 639.

of N in, 639.

of P in, 639. of K in, 639.

of Na in, 639.

Fats, detection of butylated hydroxyanisole in, 3513. determination, in feeds and meat products, 1913.

in mayonnaise, 2969.

in milk and milk products, 263. of gallic acid esters in, spectrophotometric, 5449

of sterols in, paper chromatographic, 4491. gas chromatography of, 5445.

Fatty acids, analysis of, 4010.

in serum, paper chromatographic, 2884. paper chromatographic, 5035.

C₁ to C₄, identification, paper chromatographic, 3806.

C. to C11, identification, paper chromatographic, 1417.

C₁₂ to C₁₈, determination, in blood, 659. determination, 5452.

in animal tissue, 658.

in blood, 658.

in brain, gas chromatographic, 5366. in fatty oils, i.r. spectrophotometric, 2483. spectrophotometric, 3519.

in meat, 5032.

in plasma, spectrophotometric, 2885.

in serum, spectrophotometric, 4937.

in surface-active agents, spectrophotometric, 3519.

i.r. spectrophotometric, 4011.

of iodine value of, 4007.

of the degree of unsaturation of, gas - chromatographic, 2486.

Fatty acids, determination-continued paper chromatographic, 1791, 2999, 4013, 4493, 5038 spectrophotometric, 5037. u.v. spectrophotometric, 1575. differentiation from naphthenic and resin acids, esters of, analysis of, chromatographic, 295. determination, in plasma, spectrophotometric, separation, gas chromatographic, 1937. extraction, from lipid material, 3518. hydroxy, separation, chromatographic, 216. α-hydroxy-α-methyl, separation, paper chromatographic, 583. and determination, chromatoidentification graphic, 2997. methyl esters of, mass spectra of, 1422. determination of retention volumes of, gas chromatographic, 2487. separation, gas chromatographic, 816, 3521. polyunsaturated, determination, in milk phospholipids, 736. separation, 2484. chromatographic, 1200, 1576, 2485, 2993, 4494, 5281, 5451. spectrophotometric, 3520. unsaturated, determination, paper chromatographic, 754. volatile, separation, paper chromatographic, Fatty alcohols, analysis of, gas chromatographic, 1942. Fatty oils, analysis of, gas chromatographic, 2996, 4492, 5445. paper chromatographic, 1936, 3447. u.v. spectrophotometric, 5028. detection of aldehydes in, paper chromatographic, 2480. of peroxides in, 1943. determination of cis-unsaturation in, i.r. spectrophotometric, 3514. of fatty acids in, spectrophotometric, 3519. of gallic acid esters in, spectrophotometric, 5449 of iodine value of, 5030. of linoleic acid and linolenic acid in, spectrophotometric, 3517. of Ni in, X-ray emission spectrographic, 154. of phospholipids in, chromatographic, 5444 of propyl gallate in, spectrophotometric, 5449. of refining losses in, 2995. of saponification value of, 1934. of the degree of oxidation of, 2992. u.v. spectrophotometric, 2473. of tocopherols in, polarographic, 4507. of unsaturation of, 5031. edible, analysis of, spectrofluorimetric, 275. use of i.r. spectrophotometry for, review, 1935. Feeding-stuffs, determination of Cd anthranilate in, spectrophotometric, 788. of carbohydrates in, 5050. of Cu in, 4527. of furazolidone in, 1967. of menaphthone in, 3539. of oleandomycin in, 5481. of reserpine in, 1968. of sugars in, 4528. of vitamin A in, 4529, 4530, 4531. spectrophotometric, 757. of Zn in, 4527.

Felspar, analysis of, 2661.

separation of Pb from, by ion exchange, 4711.

Ferric compounds. (See Iron (III) compounds.)

Ferricyanide, determination, 865. coulometric, 2227. potentiometric, 527. Ferrites, analysis, paper chromatographic, 1357. determination of Fe, Mn and Zn in, 525. Ferro-cokes, analysis of, 4787. Ferrocene, identification, by X-ray diffraction, 1439. i.r. spectrum of, 3826. Ferrocyanide, determination, 3253, 4271, 4786. coulometric, 5246. Ferron, use of, as indicator for FeIII, 1000. Ferrous compounds. (See Iron (II) compounds.) Fertilisers, analysis of, review, 3536. determination of N in, 1961. of Pin, 1962, 1964, 1966. spectrophotometric, 1963. of K in, flame photometric, 4031. radiometric, 3018. of H₂O in, 787. Fibre, crude, determination, in food, 260. Fibres, balance for weighing, 4541. cellulose and casein, determination, in wool felt, cotton - viscose rayon, analysis of, 1831. determination of Fe in, TAPPI method for, 1094. protein, determination of artificial, 4381. synthetic, determination, in paper, 622. use for stuffing domestic articles, determination of cleanliness of, B.S.I. method for, 4380. Fibrinogen, determination, 1517. in plasma, 2404. electrophoretic, 2403. in serum, electrophoretic, 2403. Filtration, apparatus for, 2520. centrifugal apparatus for, 5070. sorption properties of Sephadex used in, 5489. use of gels for, 803. Fireclay, determination of K and Na in, spectrographic, 1262. Fischer - Tropsch catalysts. (See Catalysts.) Fish, determination of cyanide in, spectrophotometric, 3503. of trimethylamine oxide in, 1174. pickling bath for, determination of acetic acid in, 1914. Fish-liver oils, separation of alkoxypropanediols from, 3306 Fission products, determination, continuous, remotecontrol apparatus for, 5519. in natural water and biol. materials, 3102. separation, by ion exchange, 2031, 3102. Fitelson reaction, modification of, 5447. Flame photometry. (See Photometry, flame.) Flames, spectroscopy of, in absorption and emission, 2031. Flavanols, detection, with isoniazid, 3888. Flavanones, detection, 2376, 3888. determination, spectrophotometric, 3421. identification, in orange peel, paper chromatographic, 5357. Flavonoids, chromatography of, review, 3420. detection, 3888. Flavonols, analysis of, gas chromatographic, 2881. Flavylium perchlorate, use of, as reagent in paper chromatography, 3112. Flaxedil. (See Gallamine triethiodide.) Flour, analysis of, 2962. determination of amylase in, 3980. of carotene in, review, 2965. of thiamine in, 4499. of uric acid in, paper chromatographic, 3981. Flowmeter, for use in determination of S, in iron and steel, 5483.

Flue gas, determination of SO, in, 4371.

Fluorotitanic acid, use of, in analysis, 1714. Fluorene, detection, 2313. Fluorescein, deriv. of, use of, in argentimetric Folic acid, detection, 1125. analysis, 5130. determination, coulometric, 762. Fluorescent "brighteners," analysis of, spectromicrobiological, 763. photometric, 1450. spectrophotometric, 761. separation, by ion exchange, 764.

ood. (See also Feeding-stuffs.) Fluoride, detection of impurities in, by i.r. spectra, 5242 Food. detection and determination of formic acid in, paper chromatographic, 2716. determination, 124, 2464, 2717. 1923. amperometric, 1344, 2217, 5241. of dyes in, paper chromatographic, 3509. of esters of p-hydroxybenzoic acid in, 1924. in air, apparatus for, 1184. of pesticides in, 1171, 2974, 3993. in catalysts, 4259. determination of aldehydes in, 5425. in cryolite, 3239. in glass, apparatus for, 1192. of antibiotics in, 5438. spectrophotometric, 2250. in natural water, 3397, 4025. of ascorbic acid in, photometric, 5466. of Ca in, 639. of crude fibre in, 260. in presence of Al, 3667. of DDT in, spectrophotometric, 1171. in rocks, 2219. in silicates, apparatus for, 1192. of dehydroascorbic acid in, photometric, 5466. in urine, spectrophotometric, 1113. photometric, 3079. of dyes in, 4479. B.S.I. method for, 2970. polarographic, 503. electrophoretic, 2843. pyrohydrolytic, apparatus for, 3737. paper chromatographic, 4480. spectrophotometric, 990, 5240. of halogens in, 1170. use of the polarogram of Cd in, 4257. of hexachlorocyclohexane in, 3993. of Setoglaucin O as indicator in, 2218. of hexamine in, 3992. with lanthanum chloranilate, spectrophotoof ketones in, 5425. metric, 3240 of Mg in, 639. with rotated aluminium electrode, 4769. of nicotinic acid in, 5461. Fluorides, determination of Ce in, spectrophotoof N in, 639. of P in, 639. metric, 335. of Cu in, 377. of K in, 639. of riboflavine in, 5459. of oxides in, 4770. Fluorimeter, for examination of fluorochromes, of Na in, 639. 1216. of SO, in, 3991. of thiamine in, 5460. Fluorimetry, analysis of petroleum products by, apparatus for, 836. of Sn in, 730, 1558. of uric acid in insect-infested, 1172. illuminant for, 837. Fluorine, continuous gas titration analyser for, 5067. of vitamin E in, 5469. radioactive residues in, before and after 1945, determination, 2031, 3236. survey of, 1559. amperometric, 3237. Food dyes, determination of, 1567, 1568. fluorimetric, 989. extraction and identification of, 2971. in alumina, spectrographic, 4258. spectrophotometry of, 2972. in aluminium fluoride, potentiometric, 125. Formaldehyde, separation, from methanol, 2277. in animal organs, 2219. test for, 4824. in beryllium, absorptiometric, 2587. Formamide, purification of, for chromatography, in coal, spectrophotometric, 5317. 1199. in cryolite, potentiometric, 125. Formate, determination, 3805. in DFP, 3289. Formic acid, detection and determination, in food, in natural water, in presence of Cl-, 1588. spectrophotometric, 2031. determination, in wine, 2471. in organic compounds, 559, 1051, 1774, 3287, i.r. spectra of, 180. 3288, 3289, 4314, 5264. Fraction collector, automatic, 4047. in phosphate rocks, spectrophotometric, 4768. use of, in chromatography, 804. in Sarin, 3289. delay circuit for, 1600. in the technical product, 4767. simple siphon device for, 4553. in tetrafluoroborates, 2216. use of, in column chromatography, 5074. in uranium, by ion exchange, 2715. in gradient elution chromatography, 1198. in U tetrafluoride, by ion exchange, 2715. in semi-micro distillation apparatus, 3032. in wine, 749. Frangula, determination of anthracene derivatives Fluoroacetamide, determination, in plant material, in, 2430. 1972 electrophoretic, 4999. Fluoroacetic acid, determination, in plant material, spectrophotometric, 3962. of frangula emodin in, photometric, 4456. 2-Fluorobenzoic acid, use of, in determination of of frangulin in, photometric, 4456. Fe, spectrophotometric, 2031. 1-Fluoro-2:4-dinitrobenzene, use of, in determinaof glucofrangulin in, photometric, 4456.

tion of amines, spectrophotometric, 4829.

Fluorosilicate, determination of silica in, spectro-

Fluorosilicic acid, determination, in hydrofluoric acid, spectrophotometric, 3238.

in presence of HF and HaPO4, 991.

photometric, 922.

Frangulin, determination, in frangula bark, photometric, 4456.

Freon-22. (See Chlorodifluoromethane.)

Frigen 12. (See Dichlorodifluoromethane.)

Frangula emodin, determination, in frangula bark, photometric, 4456. Fructose, detection, paper chromatographic, 572. determination, 1910, 4331, 5275.

in c.s.f., 4926.

in presence of glucose, spectrophotometric, 1064.

in semen, spectrophotometric, 4411. spectrophotometric, 1063.

Fruit, dried, determination of SO₂ in, spectrophotometric, 743.

Fruit juice, determination of the chloramine value of, 5439.

Fuel, determination of O in, 1091.

Fuel ash, determination of Al in, 1392.

of Fe in, 1392.

of P in, photometric, 85.

Fuel gas, determination of S in, spectrophotometric, 3840.

of SO, in, 4371.

sampling and analysis of, B.S.I. method for, 1817. Fulvic acid, determination, in natural water, u.v. spectrophotometric, 3008.

Fumaric acid, determination, in polyesters, 200. with bromine chloride, 3807.

Fungicides, determination of Hg in, 4037.

Furan-2:5-dicarboxylic acid, determination, in urine, 4406.

Furazolidone, determination, in feeding stuffs, 1967. Furfuraldehyde, determination, 2808, 3829.

refractometric, 1045.

5-hydroxymethyl-, determination, 2808. Furfuryl alcohol, paper electrophoresis of, 1060.

G

Gadolinium, separation, from Sm, electrolytic, 918. Galactonic acid, separation, by ion exchange, 3317. Galactonolactone, determination, 1421.

Galactosamine, determination, 2386.

Galactose, D-, detection, in urine, paper chromatographic, 648. determination, 4331.

in urine, chromatographic, 4412.

separation, from other sugars in urine, paper chromatographic, 647, 2368.

Galacturonic acid, identification, 1121.

Galena, determination of Ag in, radiochemical, 888.

Gallamine triethiodide, determination, 2949, 3972.

Gallic acid, determination, fluorimetric, 3337. esters of, determination, in oils and fats, spectrophotometric, 5449.

Gallion, reaction of, with Ga, 4163.

Gallium, analysis of mixtures of, with Al and In, i.r. spectrophotometric, 2645.

spectrographic, 2098.

analytical chemistry of, 3165.

detection, 412.

in Al products, 5178.

determination, 2090, 2647, 3164, 4164, 4168.

flame photometric, 3166. fluorimetric, 1305.

in Ga alloys, 913.

in germanium, spectrofluorimetric, 53. in presence of Al, polarographic, 2097.

of In and Tl, 2099.

of mixtures of, with aluminium, polarographic, 2097.

photometric, 1306.

spectrographic, 54, 866.

spectrophotometric, 4162.

reaction of, with gallion, 4163.

Gallium-continued

separation, 4165.

from Al, In and Tl, chromatographic, 3670.

from In, 4167. from Zn, 4166.

Gallium alloys, determination of Ga in, 913.

Garlie, determination of the odour value of Mexican, spectrophotometric, 4477.

Gas absorbers, determination of efficiency of, 5484.

Gas analysis. (See also Gases.) apparatus for, 1982, 5120.

for absorption of difficulty sol. gas in, 4550.

for continuous determination of reactive constituents, 4549.

of traces of one constituent in a mixture, 2015.

sampling in, 2514.

for detection of variation of composition in, 2515.

for determination of a component in, 4548.

of trace components in, 292.

for quant. absorption in, 2517.

for respired air, 5485.

for supply of gas at predetermined temp., 1983.

fundamental developments in, review, 5125. galvanic cells for, 3085.

gas chromatographic, 3556

gas-flow devices for use in, 3546.

improvements in, 3545, 4596. increase of sensivity in, 5509.

 i.r. spectrophotometric, use of selective radiation of gas in, 5506.

in natural water, chromatographic, 4513.

magnetically agitated Van Slyke apparatus for, 4547.

mass spectrometric, of mixtures containing molecules of identical mass numbers, 3594.

separation of mixtures by use of a carrier gas, 1984.
use of aerodynamic bridge for measuring pressure

use of aerodynamic bridge for measuring pressure in, 3027. of a.c. potentials for excitation of thermal

conductivity cells in, 5116.
of emission spectrography in, 3060.

of interferometer in, 2572.

Gas oil, study on combustion of, 2822.

Gases. (See also Coke-oven gas; Fuel gas; Generator gas; Natural gas; Synthetic gas.)

determination, in liquid metals, 797. in metals, apparatus for, 2575.

in plutonium, 3732. in uranium, 3732.

in zirconium, 3732.

of impurities in, gas chromatographic, 3053.

of CS₂ in, u.v. spectrophotometric, 956. of H₂S in, u.v. spectrophotometric, 956.

of O in, analyser for, 4046.

effect of evaporated films on recovery of, during vacuum fusion analysis, 2576.

Geiger - Müller counter, new correction factor for,

Gelatin, analysis of, standard method for, 1911.

determination of mucoprotein in, spectrophotometric, 3918.

of thiosulphate in, polarographic, 4868. Generator gas, determination of H₂S in, 4861.

of SO₂ in, 4861.

Gentisic acid, determination, in serum and urine, polarographic, 654.

Geraniol, determination, 4877.

separation, from linalol, chromatographic, 5320.

Germanium, analysis of, in ores, spectrographic, determination, 69, 1312, 2121, 4707, 4708. in ammonia liquor, photometric, 2665. in coal ash, 429. polarographic, 427. in iron ores, photometric, 3183. in Italian coals, 2031. in ores, spectrographic, 430. in topaz, photometric, 3183. in zinc ores, 4189. of Ga in, spectrofluorimetric, 53. photometric, 4190. polarographic, 3683. spectrographic, 866. spectrophotometric, 68, 70, 2031, 2664. methyl deriv., i.r. spectra of, 5292. reactions of, with organic reagents, spectrophotometric study of, 2120. trihydroxyfluorone deriv., as reagents for, 2119. Germanium dioxide, determination, in brown-coal ash, spectrographic, 428 of As in, spectrochemical, 3705. Germicidal activity, determination, of dichloroiso-cyanuric acid, 1976. of 1:3-dichloro-5:5-dimethylhydantoin, 1976. of trichloroisocyanuric acid, 1976. Ghee, detection of adulteration of, paper chromatographic, 5432. Gibberellic acid, analysis of, in grapes, 3012. determination, i.r. spectrophotometric, 1494. polarographic, 3418. Gibberellin, determination, i.r. spectrophotometric, 1494. radiochemical, 1495. Gitoxin, determination, spectrophotometric, 3954. Glass, analysis of, spectrographic, 1391. determination, of alkali and alkaline earth metals in, paper chromatographic, 368. of B in, 1687, 1688. by neutron transmission, 5169. of chloride and fluoride in, spectrophotometric, 2250. of Cu in, 4126. of fluoride in, apparatus for, 1192. of Mn in, polarographic, 4263. of vanadium oxides in, 5212. identification, in forensic work, 1044. optical, analysis of, 2031. Globulin, determination, 3480. y-, determination, in c.s.f., spectrophotometric, 4961. spectrophotometric, 1143. Glucofrangulin, determination, in frangula bark, photometric, 4456. Gluconic acid, determination, 2776. separation, by ion exchange, 3317. Gluconolactone, determination, 1421. Glucosamine, determination, 661, 2386. spectrophotometric, 2387. Glucosaminic acid, determination, spectrophotometric, 2387. Glucose, detection, in blood, 5353. paper chromatographic, 572. determination, 2957, 3307, 4331, 4652. in blood, 2875. automatic, 4916, 4918. polarographic, 3407. spectrophotometric, 2876, 4917, 4919.

in c.s.f., 4926.

in urine, 1118, 3408, 4412. spectrophotometric, 4919.

1064

in presence of fructose, spectrophotometric,

Glucose, determination, in urine, -continued spectrofluorimetric, 571. identification, in urine, paper chromatographic, 4994 separation from other sugars in urine, paper chromatographic, 647, 2368. Glucose, liquid, analysis of, paper chromatographic, 3983. standard method for, 1911. Glucuronic acid, determination, by ion exchange, in blood, spectrophotometric, 651. in urine, spectrophotometric, 651. separation, from glucuronides, in biological fluids, by ion exchange, 2371. Glucuronides, determination, by ion exchange, 3413. in urine, 3414. separation, from glucuronic acid, in biological fluids, by ion exchange, 2371. Glucuronolactone, identification, 1121 Glutamic acid, determination, 4948. L-, determination, in sugar factory products, 1561. Glutamic-oxalacetic transaminase. (See Transaminases.) Glutamine, determination, in plasma, paper electrophoretic, 1130. in sugar beet, paper chromatographic, 3499. Glutaric acid, analysis of mixtures of, with adipic and succinic acids, chromatographic, 2282. Glutathione, determination, in blood, spectrophoto-metric, 3910. Gluten, determination of moisture in, 3979. electrophoresis of, in wheat, 5013. titration of mercapto groups in, 2963. Glutethimide, determination, 1900. in blood, spectrophotometric, 1117, 3873. in plasma, spectrophotometric, 3873. in urine, 4911. spectrophotometric, 3873. Glycerides, i.r. spectroscopy of, 5443. tri-, determination, in serum, 5360. Glycerol, analysis of, 5272. determination, 1786, 2765. B.S.I. method for, 3802. in blood, 2367. in liqueurs, paper chromatographic, 4488. in serum, 1485. in urine, 1485. in wine, paper chromatographic, 4488. oxidation of, with HIO₄, 4330. Glycine, determination, 588. Glycogen, determination, 2879. Glycol ethers, determination, 4329. Glycols, determination, in diethylene glycol, gas chromatographic, 2764. polarographic, 1061. identification, paper chromatographic, 5273. paper electrophoresis of, 1060. Glycoproteins, determination, in serum, 3409. chromatographic, 3917. in urine, 2399. separation, from lipoproteins, electrophoretic, 1519. staining of, on electropherograms, 680. Glycosides, cardiotonic, chromatography of, 2929. improved spot reaction for, 3953. Glycosulphatase, assay of, preparation of substrates for, 4443. Glycyrrhizic acid, determination, in liquorice, spectrophotometric, 713. Glyoxal, determination, 576. spectrophotometric, 1066.

Glyoxal bis-(o-hydroxyanil), use of, as indicator, in

determination of Ca, 2602.

Glyoxylic acid, determination, polarographic, 5282. spectrophotometric, 2285, 4334.

Gneiss, determination of Nb in, spectrochemical, 3210

Gold, analysis of, 4671.

detection, 31, 156

determination, 1277, 4134.

atomic-absorption spectrometric, 353.

coulometric, 889.

in biological materials, by neutron activation analysis, 1469, 1474

in silver, spectrographic, 1274. in sulphide ores, by extraction, 5156.

in urine, 2867. polarographic, 3141.

spectrographic, 1275. spectrophotometric, 1276, 4670, 4791.

pharmaceutical preparations of, determination,

separation, by ion exchange, 383. from Cu and Ag, paper chromatographic, 380. from electrolytic slimes, 5258.

Granite, determination of Mo in, spectrographic, 1340.

of Nb in, 3712.

by isotope dilution, 4227. spectrographic, 3210.

of Ta in, by isotope dilution, 4227.

Granodiorite, determination of Mo in, spectrographic, 1340.

Grape must, determination of Pb in, polarographic,

Grape-seed oil, detection, in olive oil, paper chromatographic, 1940.

Grapefruit oil, determination of citral in, spectrophotometric, 3846. Graphite, analysis of, 4696.

determination of B in, by reactivity change, 3103. spectrographic, 910. spectrophotometric, 1297.

of impurities in, spectrophotometric, 2116. of U in, spectrophotometric, 3229.

Grass, analysis of, 1123.

determination of carbohydrates in, 1122. of carotene in, spectrophotometric, 1851.

identification of a-emitting radioactive isotopes in, spectrometric, 1479, 4526.

Gravimetric analysis, apparatus for washing ppt., 1985. Griseofulvin, determination, in blood, plasma or

serum, spectrofluorimetric, 1483.

GR-S rubber, i.r. data of, 2351. Guanidino-acetic acid, determination, in plasma, by ion exchange, 3911.

in urine, by ion exchange, 3911. Guanine, determination, in urine, 2391.

paper chromatographic, 2390. Gum arabic. (See Acacia gum.)

Gun-cotton, determination of nitric esters in, electrometric, 1707.

Gypsum, determination of calcium sulphate in, by ion exchange, 2635.

Haemoglobin, determination, in plasma, 214. spectrophotometric, 683. in urine, 214.

of Fe in, 1516. spectrophotometric, use of an artificial standard for, 2401.

electrophoresis of, 1144, 1515, 2400. separation of different forms of, review, 2402. Hafnium, determination, 2148, 3696.

in alloys, 4721.

in minerals, spectrographic, 78. in ores, spectrographic, 78.

in zirconium, by isotope dilution, 2678.

by neutron activation analysis, 442. spectrographic, 4209.

of impurities in, spectrographic, 2149, 2150. of Ta in, spectrophotometric, 2180.

spectrophotometric, 2135, 2677. separation, from Zr, by ion exchange, 443.

Hatnium alloys, analysis of Hf - W, 5196.

Hatnium dioxide, determination, in zirconium dioxide, spectrographic, 444.

Hair dyes, analysis of, chromatographic, 1452. Halates, determination, 122.

Haldane's apparatus, simplification of, for measuring CO2, 4551.

Halides, alkyl, detection, 4319. identification, 4819, 4820. gas chromatographic, 2758. aromatic, determination, 2757.

identification, 123. Halites, determination, 122.

Halogen compounds, organic, analysis of mixtures of, gas chromatographic, 3735.

photomicrography and crystallography of, 1078. Halogens, determination, 122, 3102.

in food, 1170.

in organic compounds, 558, 2255, 2747, 3083, 3102, 3284, 3286, 3782, 4307, 4312, 4313, 4804, 4805, 5261. simultaneously with C and H, 552.

Halloysite, determination, i.r. spectrophotometric, 4799

Haptoglobin, determination, 1514. electrophoretic, 682.

Harmaline, identification, 3951.

Harman, separation, paper chromatographic, 2926. Harmine, separation, paper chromatographic, 2926.

Harmol, separation, paper chromatographic, 2926. Hashish, (See Cannabis indica.)

Helium, determination of D in, gas chromatographic, 335, 2617.

of impurities in, gas chromatographic, 3622. of N in, gas chromatographic, 335, 2617. of O in, gas chromatographic, 335, 2617.

separation, from neon and hydrogen, chromatographic, 4659.

Hemlock. (See Conium.)

Heparin, determination, in blood, 3415. of glucosamine in, 661.

eparation, paper chromatographic, 4930.

n-Heptyl hydroperoxide, detection, 4321.

Heroin. (See Diamorphine.)

Herring, salted fillets of, determination of oxidative

stability of, 732. Hesperidin, determination, 5358.

in citrin, spectrophotometric, 656. separation, paper chromatographic, 5357.
1:2:3:4:7:7-Hexachloro-5:6-bis(chloromethyl)bi-

cyclo[2:2:1]hept-2-ene. (See Alodan.)

Hexachlorcyclohexane, detection, in natural water, i.r. spectrophotometric, 2497.

determination, in foods, spectrophotometric, 3993 in plants, paper chromatographic, 789.

of isomers of, i.r. spectrophotometric, 5479.

Raman spectrum of, 1076. Hexachlorophane, determination, in dentrifices,

spectrophotometric, 5321.

Hexahydro-1: 3:5-trinitro-sym.-triazine, determination, in mixtures with the octahydro-compound, spectrophotometric, 632.

Hexamethylenediamine, determination of 1:2-di-aminocyclohexane in, polarographic, 1077. Hexamine, detection, 4824

determination, in food, 3992. photometric, 5399.

spectrophotometric, 2941. cycloHexane, and chlorinated deriv. of, analysis of, use of dielectric constant in, 859.

cyclo Hexanediaminetetramethylphosphonic (CDTMP), chelating properties of, 10.

Hexanitrodiphenylamine (dipicrylamine), use of, in determination of Cs, spectrophotometric, 4664.

of quaternary ammonium compounds, photometric, 2292.

cycloHexanol, determination, in cyclohexanone, i.r. spectrophotometric, 563.

in presence of cyclohexanone, 604. i.r. spectrophotometric, 1083.

cycloHexanone, determination, 605. in presence of cyclohexanol, 604.

i.r. spectrophotometric, 1083. of cyclohexanol in, i.r. spectrophotometric, 563. of water in, 5304.

cycloHexanone oxime, determination, photometric,

Hexobarbitone, determination, coulometric, 254. identification, 2918.

Hexoestrol, determination, 1556.

Hexogen, determination, 5335.

Hexosamines, determination, 2386. in serum, 3409.

in tissue, 660. in urine, 3423.

spectrophotometric, 2889.

Hexoses. (See also individual compounds.) determination, in agricultural products, paper chromatographic, 1591.

in blood, 3876. in serum, 3409.

spectrofluorimetric, 571.

N-cycloHexylbenzothiazole-2-sulphenamide, mination, in rubber, polarographic, 1839.

cycloHexyl nitrite, determination in presence of cyclohexanone and nitrocyclohexane, 605.

4-n-Hexylresorcinol, determination, u.v. spectro-photometric, 729.

Histamine, determination, spectrofluorimetric, 3424. spectrophotometric, 4430. Histidine, determination, effect of O on, 4431.

in presence of leucine and methionine, polarographic, 228. paper chromatographic, 1874.

spectrophotometric, 4430. separation, by ion exchange, 3902.

Holmium, determination of rare-earth metals in, spectrographic, 2117.

Holocellulose, determination, 2845.

Homatropine methylbromide, detection, 3462.

Honey, colour specification for the official glass standards for, 4086. determination of hydroxymethylfurfural in, 3501.

Hop oil, gas chromatography of, 3995. Hops, analysis of, 4485.

comparison of methods for, 2982, 4484. determination, of a-acids in, chromatographic -

polarimetric, 3999. conductimetric, 1927

of bittering power of, in beer, 3998, 4000.

of Cu in, 1928. of Fe in, 1928.

of δ-resin in, spectrophotometric, 2468.

Hops, -continued

evaluation of, 2983.

gas chromatography of oils and resins of, 3995. study of bitter substances of, mass spectrometric, 4001.

isoHumulone, determination, in beer, conducti-metric, 4486.

Hyaluronic acid, determination, 1489, 3940.

Hyaluronidase, determination of activity of, 4444. Hydrazine, determination, 855, 4652.

amperometric, 450. in mixtures with hydroxylamine, 81. potentiometric, 2293.

Hydrazine dihydrochloride, methods for inspection of,

Hydrazine mononitrate, methods for inspection of,

Hydrazine sulphate, determination, 5205.

Hydrocarbon oil, halogenated, determination of water in, 2821.

Hydrocarbons, aliphatic, determination of structure of, i.r. spectrophotometric, 2755.

analysis of, by β-ray back-scattering, 3299. by means of Raman spectra, 2607.

in coal-tar, 3364.

i.r. spectrophotometric, 2319.

mass spectrometric, inlet-system for, 3101. of mixtures of, gas chromatographic, 1779, 3353, 3356, 3835.

aromatic, carcinogenic, determination, chromatographic, 4348.

determination, in air, apparatus for, automatic,

in lubricating oils, 2825.

separation, after nitration, paper chromatographic, 1804. gas chromatographic, 4350.

C1 to C4, separation, gas chromatographic, 565. Cs, analysis of, gas chromatographic, 3354. C₅ to C₇, analysis of, gas chromatographic, 3355. detection, 2300.

in air, 2301. i.r. spectrophotometric, 773.

determination, in gases, apparatus for, 2318. in natural gas, gas chromatographic, 1816. of alkanethiols in, 612.

of degree of branching of, ultrasonic, 2031.

of chlorine in, 1818.

of H in, radiochemical, 3785.

of H2S in, 1819. of water in, 2820.

gas chromatography of, high-temp., 1429. retention data for, 2535, 3300.

use of nylon tubing in, 3559. identification, gas chromatographic, 5267.

i.r. absorption spectra of, in the CsBr regions, 567, 1407

polycyclic, chromatography of, 4359.

determination, spectrophotometric, 1813. saturated, C₃ to C₄, analysis of, gas chromatographic, 174.

separation from benzene, gas chromatographic, 1801.

separation, chromatographic, 172.

from aliphatic alcohols, 177. from natural gas, gas chromatographic, 1816. gas chromatographic, 566, 1089, 3298.

structural group analysis of, 1406, 3357, 3358. unsaturated, analysis of, chromatographic, 295.

Hydrochloric acid, analytical methods for, 2588. analysis of, spectrographic, 4110.

determination, in presence of CrCl, potentiometric, 479.

Hydrochloric acid, determination-continued of binary mixtures of, with H,SO4, HNO3, H₃PO₄ or HClO₄, potentiometric, 868. of Fe in, 1004.

Hydrocortisone (cortisol), 11-deoxy-, determination, simultaneously with hydrocortisone, in plasma,

determination, in urine, 1526.

paper chromatographic, 5389.

simultaneously with 11-deoxycortisol, plasma, 4439.

spectrophotometric, 4455.

i.r. spectra of, 243.

separation, from mixtures of aldosterone and cortisone, paper chromatographic, 717.

Hydrocyanic acid, analysis of, in gases, 2051.

Hydrofluoric acid, adsorption of elements from, by ion exchange, 4648.

analysis of, spectrographic, 4110.

determination, in presence of HaSiF4 and HaPO4, 991.

near i.r. spectrophotometric, 2718. of Cd in, spectrophotometric, 357.

of Cu in, polarographic, 358.

of fluorosilicic acid in, spectrophotometric, 3238

of Fe in, polarographic, 358.

of Pb in, polarographic, 358, 433. of Li in, spectrographic, 360.

of S in, spectrophotometric, 1718.

of water in, 3736. Hydrogen, active, determination, apparatus for, 2616.

analysis of mixtures of, with tritium, by thermal conductivity, 4655.

determination, 3102.

continuous, 464.

gas chromatographic, 1257, 4302, 4303. in cast iron, gas chromatographic, 5248.

in coal, 4372

in coke, 4372.

in copolymers, 4387.

in hydrocarbons, radiochemical, 3785. in irradiated reactor materials, 3103.

in lubricating oils, radiochemical, 3785.

in metals, 15, 355. apparatus for, 2059. spectrographic, 2615.

in nitro compounds, 4306. in organic compounds, 1400, 3595, 3779, 3781, 3782, 3785, 4302, 4303, 4304, 4307, 5264.

simultaneously with C, 1047.

and halogens, 552.

and N, 551. in steel, 141, 3256, 4788.

gas chromatographic, 5248. spectrographic, 2614.

in tantalum, spectrographic, 2615.

in titanium, by vacuum fusion, 435.

in uranium, 492.

in water, 1659.

in zinc, spectrographic, 2615.

in zirconium, spectrographic, 2615. and Zircaloy, 937.

of CO in, spectrophotometric, 3678.

of D in, spectrographic, 869.

of dissolved, in liquids, improvement of devices for, 4552.

of T in, 3129.

on paper chromatograms, by solid scintillationcounting, 1660. separation, from He and Ne, chromatographic,

from N and CH4, gas chromatographic, 4817.

Hydrogen cyanide, determination, in air, apparatus for, 5472.

Hydrogen fluoride, analysis of, gas chromatographic. 3735.

determination, in gas mixtures, i.r. spectrophotometric, 834.

in magnesium fluoride, 127.

in uranium tetrafluoride, 127. i.r. spectrophotometric, 4260.

Hydrogen peroxide, detection, 4321. determination, coulometric, 4658.

of Cd in, spectrophotometric, 357.

of Ca in, spectrographic, 356.

of chloride in, spectrophotometric, 2220.

of Fe in, polarographic, 358. of Pb in, polarographic, 358, 433.

of Li in, spectrographic, 356.

of P in, 1259.

of Pt in, 550.

of K in, spectrographic, 356.

of silica in, 1259.

of Na in, spectrographic, 356.

of sulphate in, nephelometric, 471. polarographic, 470.

identification, paper chromatographic, 465. use of, as volumetric reagent, 14.

Hydrogen sulphide, analysis of, gas chromatographic, 2702

determination, in air, apparatus for, 5472.

automatic, 280. in coke-oven gas, 1092.

in gases, 2051.

u.v. spectrophotometric, 956.

in generator gas, 4861. in hydrocarbons, 1819.

in presence of CO2, 2183. of sulphide, potentiometric, 5220. in soln. of alkaline sulphides, 957.

production of, for analytical purposes, 1236.

use of K trithiocarbonate as substitute for, in qual. analysis, 2593.

Hydrogenated oils, determination of cis-unsatura-tion in, near i.r. spectrophotometric, 3514. Hydrogenation, apparatus for, 2616, 2751.

Hydrometers, for use with milk, 3024.

Hydron II, use of, as indicator in the determination of Ca, 4098.

Hydroperoxides, determination, in petroleum products, automatic, 193.

in polymer latex, amperometric, 4888. identification, paper chromatographic, 465. organic, determination, 1782.

Hydroxamic acid, aceto- and propiono-, determination, in presence of hydroxylamine, polaro-

graphic, 3198. Hydroxy compounds, use of metallic zinc as catalyst for acetylation of, 4322.

1-Hydroxyacridine, use of, in analysis, 3113.

11-Hydroxyaetiocholanolone. (See 5β-Androstan-17-one, 3a,11-dihydroxy-.)

11-Hydroxyandrosterone. one, 3α,11-dihydroxy-.) (See 5\a-Androstan-17-

3-Hydroxyanthranilic acid, determination, 3891. Hydroxyanthraquinones. (See Anthraquinones.) Hydroxybenzoic acid. (See also Salicylic acid.)

p-, detection and identification, paper chromatographic, 1569.

esters of, detection and identification, paper chromatographic, 1569.

in food, 1924. in wine, 1924.

determination, paper chromatographic, 601. 8-Hydroxy-5: 7-di-iodoquinoline. (See Di-iodohydroxyquinoline.)

2-Hydroxy-5: 9-dimethyl-2-phenethyl-6: 7-benzomorphan. (See Phenazocine.

5-Hydroxy-NN'-dimethyltryptamine. Hydroxytryptamine.

3-(2-Hydroxyethoxy) propane-1: 2-diol, determination, 5271.

Hydroxyflavanones, detection, 2376.

Hydroxyflavones. determination. spectrophotometric; 4416.

N-(2-Hydroxycyclohexyl) ethylenediamine-NN'N'-triacetic acid, formation of complexes with metals, stability of, 3608.

Hydroxyimino acids, α-, polarography of, 4339. 2-Hydroxyiminomethyl-N-methylpyridinium methanesulphonate, determination, spectrophotometric, 2442

5-Hydroxyindol-3-ylacetic acid, determination, in urine, spectrophotometric, 4922. paper chromatographic, 221, 4954.

5-Hydroxy-7-iodoquinoline-5-sulphonic acid. (See Ferron.

3-Hydroxykynurenine, determination, in urine,

spectrophotometric, 3907. Hydroxyl groups, phenolic, determination, in coal tar. 1053.

in pitch, 1053. Hydroxyl number, determination, i.r. spectrophotometric, 2344.

Hydroxylamine, determination, 4729. in mixtures, spectrophotometric, 4947.

with hydrazine, 81. polarographic, 3198.

Hydroxylipids, determination, in urine, 1149. 4-Hydroxy-3-methoxymandelic acid, determination,

in urine, 3883. electrophoretic, 652.

spectrophotometric, 1493. 2-(2-Hydroxy-5-methoxyphenylazo)-4-methyl-

thiazole, use of, in analysis, 46. 2-Hydroxy-5-methylbenzoic acid. (See Cresotic acid.)

5-Hydroxymethyl-2-furaldehyde (hydroxymethylfurfural), determination, in glucose syrup, 609. in honey, 3501.

Hydroxymethylglutaryl coenzyme-condensing enzyme, identification, spectrophotometric, 695. N-(Hydroxymethyl)-3- and -4-nitrophthalimides, use

of, in identification of amines, 2289. Hydroxymethylphenols, separation, from diphenylmethanes, paper chromatographic, 5325.

paper chromatographic, 1807. 8-Hydroxy-2-methylquinoline, use of, in determination of Ga. 53

2-Hydroxy-1-naphthaldehyde, use of, in determination of Pd, 5256.

2-Hydroxynaphthaldoxime, use of, in determination of V, 5213. of Zn, 4145.

5-Hydroxy-1: 4-naphthaquinone, use of, in detection of Al, 3157.

3-Hydroxy-2-napthoic acid, use of, in determination of metals, 4653.

of Fe, spectrophotometric, 1350 N-(2-Hydroxynaphthyl-1-methylene)ethylamine, use of, in determination of V, 5213.

4-Hydroxy-3-nitrophenylarsonic acid, separation, paper chromatographic, 2806. o-Hydroxyphenylacetic acid, identification, in urine, paper chromatographic, 4924.

2-(o-Hydroxyphenyl) benzoxazole, use of, in determination of Pd, amperometric, 2741.

Hydroxyproline, determination, 3905. as a measure of collagen, in leather, spectrographic, 1466.

Hydroxyproline, determination-continued. in presence of aspartic acid, 3902. in urine, 3431. spectrophotometric, 672, 4427, 4951.

Hydroxypropane-2-one. (See Acetol.)

p-Hydroxypropiophenone, determination, spectrophotometric, 723.

8-Hydroxyquinaldine, use of, in extraction of metals, 4643.

8-Hydroxyquinoline, deriv. of, use of, in analysis,

determination, u.v. spectrophotometric, 729. identification of, in 5-chloro-7-iodohydroxyquinoline, chromatographic, 725. N-oxide, use of, as reagent for U, 5129.

8-Hydroxyquinoline-4-carboxylic acid, sensitivity and selectivity of, towards certain metals, 2031.

8-Hydroxyquinoline-5-sulphonic acid, sensitivity and selectivity of, towards certain metals, 2031. 2-Hydroxystearic acid, identification, in phrenosine,

chromatographic, 216. 7-(2-Hydroxy-5-sulphophenylazo) chromotropic acid,

use of, as reagent for Be, 890. 5-Hydroxy-1-tetralone, use of, in determination of hexoses in blood, 3876.

in organic analysis, 571.

2-Hydroxy-2:5:9-trimethyl-6:7-benzomorphan. separation, from phenazocine, paper chromatographic, 1547.

5-Hydroxytryptamine (serotonin), determination, in blood, spectrofuorimetric, 663. in serum, 2388.

paper chromatographic, 221, 4954. NN'-dimethyl-, determination, paper chromatographic, 221.

Hyoscine, determination, in belladonna, 3465. separation, from atropine, paper chromatographic, 1538

Hyoscyamine (scopolamine), determination, in belladonna, 3465. spectrophotometric, 3463.

Hyoscyamus, assay of, 4447. Hypertensin, determination, in blood, 213.

Hypoxanthine, determination, in meat extracts, spectrophotometric, 4473.

Hypobromite, determination, 122. method for standardisation of, 1652. Hypochlorite, determination, 14, 122. Hypohalites, determination, 122.

Hyponitrite, separation, from nitrite, nitrate and hydroxylamine, paper chromatographic, 3199.

I

Ice-cream, determination of egg in, spectrophotometric, 262. of fat in, 263.

Ilmenite, determination of Ti in, spectrophoto-metric, 2031.

of V in, spectrophotometric, 1715. simultaneous determination of Fe and Ti in, 1319. Ilvin, separation, from other drugs, chromato-

graphic, 3489. Imidazole acetylase, determination of activity of, 3939

 $\beta\beta'$ -Iminodipropionitrile, use of, in determination of organic sulphur compounds, gas chromatographic, 1427.

Iminodisulphonic acid, determination, in mixture with nitrilotrisulphonic acid, 1722

Indican, determination, in urine, spectrophotometric, 4923.

Indane, i.r. data of, 2302.

Indicators, acid - base, review, 1646. study of, spectrophotometric, 853.

chelatometric, use of, in analysis, 2043. elimination of "blocking" of, in complexometric titrations, 2603

fluorescent adsorption, 6, 1242.

for use in iodimetric titrations, 1241. luminescent, use of diacridyl deriv. as, 5.

metallochromic, use of 2-NN-di(carboxymethyl)aminomethylquinizarin as, in determination of Ca. 4675.

in determination of Ca in serum, 3866. of 1-(2-thiazolylazo)-2-naphthol as, 5132.

metallofluorescent, use of calcein blue as, 5131.

in detection of metals, 4633.

of umbellicomplexone as, 4634. of xanthocomplexone as, 4634.

pyromellitein, use of, in acid-base titrations, 4096,

redox, use of Variamine blue as, review, 1243. use of, adsorbed on ion exchange resins, 4097.

of benzidine as, 2036.

of brucine as, 2599.

of glyoxal bis-(o-hydroxyanil) as, in determination of Ca, 2602.

of Hydron II as, in the determination of Ca,

of N-phenylanthranilic acid as, 2600. of Plasmocorinth B as, in complexometric titrations, 2042.

of siloxene as, in cerimetric and chromatometric titrations, 2041.

in permanganate titrations, 2040. of triphenylmethane dyes as, 2598.

Indigo carmine, determination, spectrophotometric,

Indigosol blue IBC. (See Dyes, C.I. Solubilised Vat Blue 6.)

Indium, adsorption of, by ion exchange resins, 1307.

analysis of, by radioactivation, 4171. of mixtures of, with Al and Ga, i.r. spectrophotometric, 2645.

analytical chemistry of, 3165. determination, 413, 4170, 4168.

by photometric titration, 4169.

flame photometric, 3166. in minerals, radiochemical, 2031.

in ores, spectrographic, 430, 2100.

in presence of Ga and Tl, 2099. in rocks, radiochemical, 2031.

in silicates, 2622.

in thorium, spectrophotometric, 3671. in uranium, spectrophotometric, 3671. of Pb in, 4172.

of Zn in, 4172.

polarographic, 3617, 5179.

radiochemical, 414.

spectrographic, 54, 866, 2057.

spectrophotometric, 413. with organic acids, 2031.

separation, from Al, Ga and Tl, chromatographic, 3670.

from Sb and Sn, by ion exchange, 4173. from Sb, Sn and Te, by ion exchange, 5141.

from Cd and Zn, by ion exchange, 3167. from Cd, Zn and Tl, electrolytic, 1658. from Ga, 4167.

Indium arsenide, determination of Cu and Pb in, polarographic, 3672.

Indole, deriv. of, identification, paper chromato-graphic, 608.

detection, on paper chromatograms, 3830. paper chromatography of, 3350.

Indolylacetic acid, detection, paper chromatographic,

Industrial wastes, analysis of, radiochemical, 3103. determination of Cl-in, spectrophotometric, 2493.

of CN- in, 3533. of CN-, OCN-, CNCl- and Cl- in, 1590.

of Re in, 1348. of Ag in, spectrophotometric, 5043.

Inert gases, analysis of, 2058.

Inorganic compounds, analysis of, by "conductimetric extraction titration". 350.

review of advances in, 5125. determination of the solvation numbers of extracted, 1251. microchemical methods for, 3102

Inorganic salts, non-aq. titration of, 1250.

Insoluble substances, qual. analysis of, 1642.

Instrumentation, fundamental developments in, review, 5125.

use of, in foundry laboratories, 3021.

Insulin, bio-assay of, with mice, 3478. determination, gravimetric, 1893.

Intercaine, detection, oscillopolarographic, 1163. Interferometer, use of recording, in gas analysis, 2572.

Inulin, analysis of, 3887.

chromatography of, 3410.

determination, in chicory, 2976.

Invert sugar, analysis of, standard method for, 1911. determination, 3493.

in cane sugar juice, 2447.

Iodate, behaviour of, on anion exchange resins. 4755

determination, 122, 865. coulometric, 511.

in presence of periodate, bromate and chlorate, 3739.

Iodide, behaviour of, on anion exchange resins, 4755. detection, paper chromatographic, 1863. determination, 509.

by isotopic exchange, 4773.

coulometric, 5246.

in brine, spectrophotometric, 995.

in natural water, 1954.

in presence of chloride and bromide, spectrophotometric, 2221.

in soln., 2051.

polarographic, 510.

radiometric, 2960.

separation, with zinc acetate, 4629.

Iodine, determination, 4956.

coulometric, 511.

in biological material, by neutron activation analysis, 2870.

in blood, radiochemical, 3398.

in natural water, spectrographic, 1186.

spectrophotometric, 4026.

in organic compounds, 559, 560, 3291, 3793, 3794.

in presence of arsenate, 992.

in sea water, amperometric, 4518.

in silicon, by neutron activation analysis, 4702. in thallium iodide ppt., 4261.

polarographic, 508 potentiometric, 994.

radiometric, 2960.

protein-bound, dry-ash method for, 1508. separation of ¹³¹I from Te, 993.

Iodine ointments, assay of, by flask combustion method, 3291.

Iodine trichloride, use of, in determination of reducing agents, 855.

Iodine value, determination, 2991. of fatty acids, 4007. spectrophotometric, 2477. of olive oil, 1574.

Iodochlorhydroxyquinoline. (See 5-Chloro-7-iodohydroxyquinoline.)

Iodothyronines, separation, from iodotyrosines and thyroxine, by ion exchange, 3435.

Iodotyrosines, separation, from iodothyronines and thyroxine, by ion exchange, 3435. Ion exchange, fundamental developments in, review,

recent applications in analysis, review, 2605. separation of acids by, potentiometric control of, 304.

Ion exchange materials, use of, in analysis, 4628. Ionisation constants, use of, in detection of func-tional groups and structures, 4642.

Ionium, determination, by measuring the aactivity, 5204.

Ionone, analysis of, gas chromatographic, 1810. Ipecacuanha, determination of emetine in, spectrophotometric, 3466.

Ipomoea hederacea, determination of resin in, 3961.

Iridium, detection, 156.

determination, spectrographic, review, 1377. spectrophotometric, 4791.

isolation of, from concentrates, 4792. Iron. (See also Iron, cast; Iron alloys; Steel.) analysis of, polarographic, 145, 5140.

analytical methods for, 2588

complexes of, with quinaldinohydroxamic acid, spectrophotometric data for, 1238. concn. of traces of, from soln. of Ni, Co or Zn

salts, 524. detection, 999.

in brass, spectrochemical, 4667.

spectrographic, 18.

determination, 10, 22, 131, 521, 1000, 1001, 1256, 2223, 2224, 2727, 2728, 3251, 4266, 4267, 4285, 4780, 4781, 5203, 5245.

apparatus for, 3576. by ion exchange, 4783. by X-ray fluorescence, 134. coulometric, 511.

in alloys, 541.

in ammonium fluoride, polarographic, 358. in arsenic, by ion exchange, 3202.

in basic slag, 2729, 2744. in bauxite, X-ray fluorescence spectrometric, 1386. in beer, 747.

in beryllium, absorptiometric, 2587. spectrophotometric, 4673.

in beryllium compounds, 392.

in beryllium oxide, spectrophotometric, 4673. in blood, 1478, 3448.

in bronze, photometric, 4784. in chrome ores, 2118.

in chromium, 3743.

in clay, X-ray fluorescence spectrometric, 1386. in cobalt matte and concentrates, flame photometric, 1358.

in copper alloys, photometric, 351.

in ferrites, 525.

in fibres, TAPPI method for, 1094. in fuel ash, 1392.

in haemoglobin, 1516.

in hops, 1928.

in hydrochloric acid, 1004.

in hydrofluoric acid, polarographic, 358. in hydrogen peroxide, polarographic, 358.

in lead, spectrophotometric, 1746.

Iron, determination-continued in manganese, 1746. spectrographic, 1347.

in manganese ores, 4775.

in mixture with Ce, coulometric, 1748. with Cr, U and V, potentiometric, 116. with iron oxides and cementite, 4787.

in natural water, 1586. in nickel, 1746, 1751, 5255. in ores, B.S.I. method for, 1356.

in oxides, 2726.

comparison of methods for, 523. in petroleum coke, spectrographic, 2827.

in phosphate, 2225.

in plant tissue, by atomic absorption spectrometry, 3252.

spectrophotometric, 2868. in plasma, spectrophotometric, 1115.

in presence of Al, 408, 1304. of As, Sb and Sn, 1747.

of Ni, 1026.

of Ti, in ilmenite, 1319. in refractories, B.S.I. method for, 1356. and limestone, spectrophotometric, 2730. in rock salt, 5142.

in sand, 3250.

in selenium, spectrographic, 2057. in serum, 4907, 5344.

spectrophotometric, 3399.

in silicates, spectrophotometric, 133, 163, 2730.

in silver, spectrographic, 1274. in slag, B.S.I. method for, 1356.

in sodium carbonate, 3250.

in soil, by atomic absorption spectrometry, 3252.

spectrophotometric, 784. in sulphated castor oil, 620.

in tin, 1746, 3685. in titanium, 436.

in titanium alloys, spectrographic, 863. in titanium dioxide, photometric, 1353.

in uranium, spectrographic, 493. in uranium dioxide, spectrographic, 1354. in U - Mo alloys, absorptiometric, 2587.

in uranium ores, 1355.

in uranyl nitrate, X-ray fluorescence spectro-metric, 3235.

in uranyl sulphate, 1003. in urine, 1478, 2361.

spectrophotometric, 2362.

in wine, 4489.

spectrophotometric, 1931. in zinc, 1746.

in Zircaloy, spectrographic, 2146. in zirconium salts, 2225

of Al in, B.S.I. method for, 1362.

of B in, 3749. of Cu in, 4125.

of impurities in, spectrographic, 4273. of Fe^{II}, in silicates and carbonates, spectrophotometric, 163.

of Pb in, 3752.

spectrophotometric, 432.

of Mn in, 2732 of Mo in, 3223

of Nb in, 1760. of S in, 1369.

flowmeter for, 5483.

spectrophotometric, 3758.

of Sn in, 1010, 1011.
of U in, N.B.S. standard for, fluorimetric, 1371.
of V in, spectrophotometric, 536.

photometric, 641, 3249.

review of developments in, 135.

Iron, determination-continued simultaneously with Al, in sea water, spectrophotometric, 2498. with Cu, in aluminium, by cathode-ray polarography, 5177. with Ni, polarographic, 1750. with U, spectrophotometric, 4253. spectrophotometric, 339, 867, 1002, 1350, 1351, 1352, 2031, 2643, 2724, 2725, 2731, 3603, 3745, 3746, 4226, 4268, 4269, 4779, 4782, 5244. extraction of Fe3+, from chloride soln., 522. mechanism of KMnO₄ - Fe¹¹ - Cl⁻ system, 132. pickling liquor for, determination of NaCl in, 3738. separation, 2723. by extraction, from metal soln., 2226. chromatographic, 4108. from Al, in soil, 4525. and Cr, paper chromatographic, 2614. from Co, Cr, Mo, Nb, Ni, Ta, Ti and W, in high-temp. alloys, by ion exchange, 2056. from Cu, Mo and Ni, in yttrium, 2109. from Mn, 1749. from Te, 3721. from Ti, 3254. spectrographic excitation of, with 59 Fe, 335. study of system Fe^{III} - lactic acid, spectrophotometric, 2031. Iron alloys, determination of Al in, B.S.I. method for, 1362.
of B in, spectrographic, 1005.
of C in, 533. spectrographic, 863. of components in Fe - Al - C, 1754. of Cu in, photometric, 376. spectrographic, 4270. in Fe - Cd, polarographic, 28. of Pb in, spectrographic, 4270. in Fe - Cd, polarographic, 28. of Mn in, potentiometric, 4262. of Mn, in Fe - Mn, 997, 2732. of Mo in, 3223. of Nb in, 950. of P in, by ion exchange, 1015. of S in, 533. by ion exchange, 1015. spectrographic, 1370. in Fe - Si, coulometric, 136. of Ta in, 950. of V in, 461. spectrophotometric, 3208. of Zn in, spectrographic, 4270. of Zr in, 528. Iron (II) ammonium sulphate, stability of, 1245. Iron, cast, analysis of, 2722. determination of B in, spectrographic, 3658. of Ca in, flame spectrophotometric, 531. of C in, gasometric, 1758. spectrographic, 138, 3261. spectrophotometric, 2234. of Cu in, 2230. of H in, gas chromatographic, 5248. of Pb in, 2230. review, 5249. of Mg in, chromatographic, 1753. photometric, 3259 spectrographic, 2231. of Mn in, 3740. of N in, 4282. gas chromatographic, 5248. of O in, gas chromatographic, 5248. of P in, 1012. of Si in, 1363.

Iron, cast, determination-continued of S in, 1758, 3757. of trace elements in, 4272. spectrographic, 138. grey, determination of C in, spectrographic, 3261. separation of carbide in, electrolytic, 1752. Iron (III) chloride, extraction of, with ethyl acetate, 120 Iron ores, analysis of, 130. determination of Ge in, photometric, 3183. of V in, spectrophotometric, 1715, 3208. of Zn in, in presence of Co and Ni, polarographic, 47.

Iron (II) oxide, determination, in steel, photometric, 1014. Iron (III) oxide, pptn. from homogeneous soln., 4785. Iron oxides, analysis, paper chromatographic, 1357. determination, in soil, 786. Iron (III) thiocyanate, determination of solvation number of, 1251. Isatin, spot test for, 5310. Isochlorthion, detection and determination, polarographic, 790. Isoniazid, determination, 3969. in plasma, spectrophotometric, 3404. in presence of sulphafurazole, 3486. in serum, 643. in urine, spectrophotometric, 644, 3404. potentiometric, 2293. spectrophotometric, 2943. identification, 3951. separation and identification, paper chromatographic, 1906. use of, in detection of chalcones, 3888. of flavonoids, 3888.

Isoprene, analysis of, gas chromatographic, 3300. Isosakuranetin, 7-rhamnoglucoside, separation, from naringin and hesperidin, in orange peel, paper chromatographic, 5357. Isotopes, separation, method for, 2027. electrophoretic, improved Isoxazole, i.r. and Raman spectra of, 190.

1

Jam, determinatiin of benzoic acid in, spectrophotometric, 5437.
 Juglone. (See 5-Hydroxy-1: 4-naphthaquinone.)

W

Kaladana. (See Ipomoea hederacea.)
Kalignost. (See Sodium tetraphenylboron.)
Kaolin, analysis of, 2661.
determination, i.r. spectrographic, 4799.
Kaolinite, determination, i.r. spectrographic, 4799.
Kapok wax, Java, analysis of, 1853.
Karl Fischer reagent, stabilised, 1237.
Katharometers. (See Chromatography, gas.)
Kerosene, analytical method for, 2588.
Ketimines, determination, 1071.
Keto groups, determination, 1777.
Ketones, cyclic, determination, paper chromatographic, 3334.
detection, 4354.
determination, 2031.
in blood, spectrophotometric, 5356.
in foods, 5425.
of water in, photometric, 3311.
paper chromatographic, 3040.
polarographic, 3309.

Ketones, determination-continued semi-quant., by flash-exchange gas chromatography, 4825.

dialkyl, separation, paper chromatographic, 583. paper chromatography of, 3310. separation, chromatographic, 806

from aldehydes, chromatographic, 1789, 5278. Ketosteroids. (See Steroids.)

Kjeldahl method. (See also Nitrogen.)

apparatus for, 800.

Kraft liquor, analysis of, 2335.

Kynurenic acid, determination, in blood, paper chromatographic, 1506.

in c.s.f., chromatographic, 1506.

Kynurenine, and deriv., determination, in blood, c.s.f. and urine, chromatographic, 1506.

determination, in urine after administration of tryptophan, spectrophotometric, 3907.

factors affecting determination of, 1862.

3-hydroxy-, determination, in urine, spectrophotometric, 3907. identification, in urine, chromatographic, 5376.

Lacquers, analysis of, gas chromatographic and i.r. spectrophotometric, 1837. determination of methanol in, spectrophotometric,

Lactaldehyde, separation, from acetol and pyruv-aldehyde, chromatographic, 2279. Lactase, determination of activity of, paper chrom-

atographic, 3931. Lactic acid, determination, 3493.

in semen, spectrophotometric, 4411.

Lactic dehydrogenase, determination of activity of, spectrophotometric, 2416.

in serum, fluorimetric, 4441. photometric, 1880.

spectrophotometric, 5394.

Lactones, detection, i.r. spectrophotometric, 3889. Lactose, determination, in milk, 2456.

spectrophotometric, 2457. in skim milk and whey, i.r. spectrophotometric,

in whey, spectrophotometric, 2457. separation from other sugars in urine, paper chromatographic, 647, 2368, 4924.

Laevulic acid, determination, 3316.

Lanthanides. (See also Rare earths.)

separation, 3173.

from Ac, Sc and Y, paper chromatographic, 4176.

Lanthanum, determination, 57, 3172. in granite, spectrographic, 5181.

in La - Tl alloys, 1309. spectrophotometric, 1692.

extraction of, 3676. polarography of, 917.

reduction of, at dropping Hg electrode, 4179. separation, 2118.

electrolytic, 1693, 3173.

from Ce, Pr, Sr and Y, by focusing ion exchange,

of 140 La from 140 Ba, 61.

from other radio-isotopes, 3620. Lanthanum chloranilate, use of, in determination of fluoride, spectrophotometric, 3240.

Lanthanum oxide, determination of Pr in, radiochemical, 4106.

Lanthionine, determination, 1138.

Lard, determination of butylated hydroxyanisole in, spectrophotometric, 1565. of propyl gallate in, spectrophotometric, 3510.

Lard oil, determination of iodine value of, 5030.

Largactil. (See Chlorpromazine.)

Larocaine, detection, oscillopolarographic, 1163. identification, 3951.

Lead, detection, in brass, spectrochemical, 4667. in internal organs, paper chromatographic, 3977.

in paint films, 5331.

spectrographic, 18. determination, 72, 928, 1253, 1657, 1697, 2668, 3127, 3689, 3709, 4710.

amperometric, 3122

by cementation with magnesium, 864. by electrolysis, potentiostat for, 5122.

in air, 4508.

in Al K sulphate, polarographic, 4599.

in ammonium fluoride, polarographic, 358, 433. in anodic slimes, 932.

in blood, 1111.

oscillopolarographic, 5349.

in brass, 905. polarographic, 1699.

in bronze, 905. in cadmium, polarographic, 4684.

in Cd - Fe alloys, polarographic, 28. in cast iron, 2230.

review of methods for, 5249.

in copper, 4195.

polarographic, 930, 3139. in copper alloys, 351.

in copper matte, polarographic, 931. in grape must, polarographic, 4005.

in hydrobromic acid, u.v. spectrophotometric, 4193.

in hydrofluoric acid, polarographic, 358, 433. in hydrogen peroxide, polarographic, 358, 433.

in indium, 4172

in indium arsenide, polarographic, 3672.

in iron, 3752.

in iron alloys, spectrographic, 4270. in magnesium, 4195.

in marcasite, 1656.

in Muntz metal, polarographic, 3691.

in natural water, by ion exchange, 1698. in nickel, 4195.

in ores, polarographic, 2018.

in organic substances, polarographic, 4104.

in petrol, flame photometric, 2823. in presence of Bi, Sb and Sn, polarographic, 2054.

of Fe, polarographic, 1655.

of other elements, polarographic, 4107. of Tl, in zinc, polarographic, 1286.

in pyrites, 1656.

in silicon, spectrographic, 924. in silver, 4195.

spectrographic, 1274.

in spirits, 1932.

in steel, 2230, 3752.

B.S.I. method for, 5247.

spectrophotometric, 534.

in sulphide ores, simultaneously with Zn, polarographic, 434.

in thallium, 4172.

spectrographic, 2057. in tin, polarographic, 4192.

in urine, spectrophotometric, 4402.

in wine, 1932, 4005.

in zinc, 4195.

in zinc acetate, polarographic, 4599.

in zirconium and its alloys, polarographic, 4207, 5188.

of Sb in, photometric, 2123. spectrographic, 2669.

Lead, determination-continued of Bi in, photometric, 3692. spectrographic, 2669. of Ca in, 1675.

of Cu in, 4125.

spectrographic, 2669.

of Fe in, spectrophotometric, 1746.

of Mg in, 1675.

of other metals in, paper chromatographic, 348. of Ag in, spectrographic, 2669.

of Sn in, photometric, 71.

spectrographic, 2669. of Tl in, photometric, 2123.

polarographic, 73, 1255, 3128, 3617, 3690, 4194. radiochemical, 9.

spectrophotometric, 432.

polarography of, in hydroxide and cyanide media, 929

separation from Bi, Cd, Cu and Hg, paper chromatographic, 2052, 2614.

from felspar, by ion exchange, 4711.

from thorium, by ion exchange, 4712. from thorium nitrate, by ion exchange, 2156.

of Ba from, in presence of Sr, 2082.
of 210Pb from Po and Ra, by ion exchange,

of 212Pb from other radio-isotopes, 3620. of Ag from, 30.

structural analysis of compounds of, by X-ray diffraction, 12.

Lead acetate, determination, in pharmaceuticals, 4465

Lead alloys, analysis of, 1657, 3618, 4196. of Sn in, spectrophotometric, 2667.

of Te in, polarographic, 2192. in Pb - Sb - Te, 3218.

Lead dithizonate, extraction constant of, 3688. measurement of mol. extinction coeff. of, spectrophotometric, 3687.

in CCl₄, 2031. Lead ferrite, determination, in slag, 933.

8-hydroxyquinolinate, spectrophotometric stability of, on filter-paper, 4647.

Lead monoxide, determination, in plasters, 4465. Lead ores, analysis of soln. derived from, spectrographic, 2248.

Lead styphnate, determination, polarographic, 2309. Leather, analysis of, B.S.I. method for, 631.

destruction of, with periodic acid, 5139. Leaves, determination of water in, 4657.

Lecithin, determination, in serum, i.r. spectrophotometric, 1499.

separation of phospholipids of, chromatographic, 1498

Lecithinase D, preparation of, for use in determination of egg, 262. Lemonade, determination of quinine in, fluorimetric,

1926. Lemon curd, determination of egg in, spectrophoto-

metric, 262. Lemon juice, deta beverages, 2978. determination, in non-alcoholic

Lemon oil, determination of citral in, spectrophotometric, 3846.

of menthyl salicylate in, spectrophotometric, 1824

Lemongrass oil, determination of citral in, spectrophotometric, 3846. Lepidolite, isolation of radiogenic Ca from, by ion

exchange, 5160.

Leptazol, determination, 1549. refractometric, 1166. Leucocidin, determination, 2887.

Lidocaine. (See Lignocaine.)

"Light oil," separation of benzene, toluene and xylene in, gas chromatographic, 1089.

Lignin, determination, in paper pulp, comparison of methods for, 621.

spectrophotometric, 1832. of hydroxyl groups in, 2375.

separation of degradation products of, 1809. Lignite, determination of trace elements in. 3365.

Lignocaine, determination, 2940. electrophoretic behaviour of, 3967.

Lime, determination of CaO in, 3149. Lime, chlorinated, determination of active Cl, Cland ClO, in, potentiometric, 504.

Lime oil, determination of citral in, spectrophotometric, 3846.

Limestone, determination of carbonates, in, thermogravimetric, 5046. of Fe in, spectrophotometric, 2730.

Linalol, determination, 4873. separation, from geraniol, chromatographic, 5320. Lindane. (See Hexachlorocyclohexane.)

Linoleic acid, determination, in fatty oils, spectrophotometric, 3517.

u.v. spectrophotometric, 4012.

Linolenic acid, determination, in fatty oils, spectrophotometric, 3517.

u.v. spectrophotometric, 4012.

Lipids, detection, in chromatographic column effluents, 2382. determination, in serum, chromatographic, 4936.

of ester groups in, spectrophotometric, 219. of P in, 2381.

extraction and purification of, 1852. from human tissues, analysis of, 2380.

hydrolysates of, determination of ethanolamine and serine in, spectrophotometric, 4952. separation, of classes of, 1877.

paper chromatographic, 1127, 2886, 4006. Lipoproteins, serum, determination, 1518 electrophoretic, 681, 3914, 4964, 5382.

turbidimetric, 232. separation, from glycoproteins, electrophoretic, 1519.

Liqueurs, determination of glycerol in, paper chromatographic, 4488.

Liquorice, determination of glycyrrhizic acid in, spectrophotometric, 713.

Lithium, analysis of, 3625. spectrographic, 5145. determination, 872, 4118.

by neutron activation, 5146.

conductimetric, 3624.

flame photometric, 366. flame spectrophotometric, 5162.

in ammonium fluoride, spectrographic, 360.

in beryllium, spectrographic, 2588. in calcium, spectrographic, 896.

in hydrofluoric acid, spectrographic, 360. in hydrogen peroxide, spectrographic, 356.

in magnesium, spectrographic, 2587.

in minerals and ores, spectrographic, 361. in presence of Al, 2063.

in silicate minerals, flame photometric, 2619. in spodumene ores, 362.

spectrographic, 873, 2139. separation, by ion exchange, 3131.

chromatographic, influence of organic solvents in, 2065

Lithium arsenide, analysis of, 364.

Lithium hydroxide, determination, in K - Li electrolytes, spectrographic, 363.

Lithium tetra-p-tolylboron, use of, in determination of Na, 2064.

Lithopone, analysis of, thermogravimetric, 400. determination of Zn and ZnO in, 3384. Lobeline, determination, photometric, 4451.

Lockheed critical experiment reactor, analytical requirements of, 335.

Lonchocarpus, determination of rotenone in, 1969,

Lubricating greases, B.S.I. specification for, 2828. Lubricating oil, analysis of, mass spectrometric,

determination of aromatic hydrocarbons in, 2825.

of H in, radiochemical, 3785. of impurities in, gas chromatographic, 2829. of P in, spectrophotometric, 1444.

identification of 2-ethylhexyl hydrogen sebacate in, 184.

spectrofluorimetry of, 3841.

Luminescence, use of, in detection of Sn, 2122.

Lupin alkaloids, determination, paper chromato-

graphic, 5080.

Lutetium, determination, in minerals, 2031.

Lutidine, analysis of, 1815.

Lysine, determination, in cottonseed, spectrophotometric, 3537.

in protein hydrolysates, 5369.

in urine, paper chromatographic, 226.

e-dinitrophenyl-, double-fronting phenomenon in chromatography of, 2522.

separation, from arginine, histidine and tryptophan, by ion exchange, 3902.

Lysozyme, determination, 2421.

MCPA. (See 4-Chloro-2-methylphenoxyacetic acid.) (See 4-Chloro-2-methylphenoxybutyric

acid.) Magnesia clinker, analysis of, for refractories, 2743. Magnesite, determination, in rocks, 1034.

of CaO in, flame spectrophotometric, 1674.

of MgO in, 1279.

of K in, spectrographic, 1262.

of silica in, 1279.

of Na in, spectrographic, 1262.

Magnesium, analysis of, B.S.I. method for, 2639. cation exchange elution of, by HCl and HClO4, 3641

composition of complexes with oxalate, 2031. determination, 862, 1280, 1684, 3143, 3148, 3642,

4113.

by ion exchange, 1744. complexometric, 2594.

flame spectrophotometric, 2632.

in aluminium, 3161.

spectrographic, 1303.

in basic slag, 2744.

in bauxite, 3161.

in biological materials, 3868.

in blood, 2357.

in bone, 3144.

in cast iron, photometric, 3259. spectrographic, 2231.

in c.s.f., 4397.

in electroplating soln., 3272.

in faeces, 639.

in food, 639.

in lead, 1675.

in manganese, spectrographic, 1347.

in milk, 1564, 5019.

in natural water, 4024, 5475.

in nickel and its alloys, 3269.

in plant tissue, by automatic titration, 1472.

Magnesium, determination-continued

in plants, 287.

spectrographic, 5044.

in plasma, 5019.

pectrographic, 1108.

in Portland cement, radiometric, 4674. apparatus for, 3576.

in presence of Ca, 2633, 5159.

of foreign cations, radiochemical, 2031.

in rock salt, 5142.

in rocks, photometric, 2077.

in serum, 1110, 2031, 3862, 3863, 4397. by atomic-absorption spectrometry, 1470, 4900.

flame spectrophotometric, 1107. spectrofluorimetric, 3388.

in sodium chloride, 1281.

spectrophotometric, 394.

in soil, 287, 3535.

elimination of interference by Mn in, 4522.

in steel, photometric, 3756. in sulphated castor oil, 620.

in titanium slag, 1676.

in tomato juice, flame photometric, 3506.

in tomatoes, flame photometric, 3506.

in urine, 3863, 4397.

spectrofluorimetric, 3388. in viscose spinning liquor, 3377.

in uranium, flame photometric, 335. spectrographic, 493.

spectrophotometric, 983.

in vanadium, spectrographic, 2588.

of Al in, 3145. of Cu in, 4125.

of Pb in, 4195.

of Li in, spectrographic, 2587. of MgO in, 97.

paper chromatographic, 3643.

polarographic, 2078. radiometric, 2634.

spectrofluorimetric, 3146.

spectrographic, 4139.

spectrophotometric, 34, 3147.

with photometric end-point detection, 35. extraction of, with isobutyl methyl ketone, 4109. identification, with azo compounds, 3601.

separation, from Ca, K and Na, in biological materials, paper chromatographic, 3626. from Na and K, 4138.

Magnesium alloys, analysis of, spectrographic, 3160. determination of Al in, 1302.

of Al, Be, Mn and Zn in, 3619.

of Cd in, 1685.

of Cu in, 4125.

identification of, 2094.

Magnesium fluoride, determination of H₂O and HF in, 127.

Magnesium oxide, determination, in magnesium, 97. in magnesite, 1279.

in magnesium silicate, 1279.

Magnesium perchlorate, use of, in Pregl tubes in micro-analysis, 2592.

Magnesium trisilicate, determination of MgO in, 1279.

of silica in, 1279.

Magnetite, analysis of, by X-ray diffraction, 3775. Maize, determination of moisture in, 3979.

Malachite, determination, in copper minerals, 2627.
Malachite green. (See Dyes, C.I. Basic Green 4.)

Malathion, determination, in cottonseed, 1593. Maleanilic acids, use of, in inorganic analysis, 1644.
Maleic acid, determination, with BrCl, 3807.

Maleic hydrazide, determination, 2503.

Malonaldehyde, determination, in meat, 3988.

Malonic acid, critical soln. temp. of some systems with, 4826.

determination, 1793.

in urine, paper chromatographic, 650.

Malt, correlation between analytical data and brewing factors, 2981.

determination of amylase activity of, 2467, 2980. Malt extract, determination of carbohydrates in,

of diastatic power of, 1179.

Malt wort, analysis of, 2987.

determination of carbohydrates in, 5440. of tannin in, u.v. spectrophotometric, 1572.

Maltase, determination of activity of, paper chromatographic, 3931.

Maltose, determination, 4331.

Mandelamidoxime, use of, in determination of Cu, 3137

Mandelic acid, determination, 1550, 2798.

Manganate, determination, polarographic, 2721. with arsenite and tellurite, 3742.

Manganese, detection, in brass, spectrographic, 4667. determination, 512, 513, 2071, 3741, 4113.

by ion exchange, 1744. in alloys, 541.

in ammonium fluoroberyllate, 2720.

in basic slag, 2744.

in beryllium, absorptiometric, 2587.

in beryllium compounds, 515, 2720. in cast iron, 3740.

in ferrites, 525.

in glass, polarographic, 4263. in iron, 2732.

in iron alloys, 997. potentiometric, 4262. in Fe - Mn alloys, 2732. in magnesium alloys, 3619.

in nickel, 5255.

in cyclopentadienylmanganese tricarbonyl and its methyl deriv., spectrophotometric, 3838. in petrol, flame photometric, 2823.

spectrophotometric, 3838.

X-ray emission spectrographic, 1443. in plants, by atomic absorption spectrometry, 3252.

spectrochemical, 5044.

in presence of Cu, 1669. in soil, by atomic absorption spectrometry, 3252

in steel, 2732, 3740, 3761, 4283. photometric, 1346.

in uranium, spectrographic, 493

in wheat, polarographic, 4521. of Al, Ca, Cu, Fe, Ni and Mg in, spectrographic, 1347.

of Cu in, photometric, 376. of Fe in, 1746.

polarographic, 4774.

spectrophotometric, 514.

in the Co - Cr - Mn system, study of interferences in flame photometry, 2031.

precipitation of, in silicate rock analysis, 2719. preparation of standard soln. of Mn¹¹¹, 1653. separation, from Fe, 1749.

from Mo, Re, Ru and Tc, 4776.

from Ni, with tri-n-butyl phosphate, paper chromatographic, 4108.

of Co from, by ion exchange, 148.

with electrogenerated vanadyl ion, 1743. Manganese alloys, determination of O, in Mn - Ti, 952

Manganese ores, determination of Fe in, 4775. Manganese oxides, determination, 3244. of MnO, in steel, 1014.

Manganese oxides, determination-continued

of O surplus in MnO, 4644.

of MnO₂, 3244. of V in MnO₂, spectrophotometric, 1715. Mangoes, determination of organic acids in, paper chromatographic, 1176.

Manna, identification, 715.

Mannans, determination, in coffee, 3511.

Mannitol, determination, 1786. in blood serum, 1485.

in urine, 1485.

separation, paper chromatographic, 3308.

Mannonic acid, determination, by ion exchange, 3317.

Mannose, detection, paper chromatographic, 572, 3308

Maple syrup, colour specification for the official glass standards for, 4086.

Marcasite, determination of Cd in, 1656.

of Cu in, 1656. of Pb in, 1656.

Margarine, analysis of, spectrophotometric, 5431. detection of preservatives in, microbiological, 273. determination of vitamin A in, u.v. spectrophotometric, 4497

Mass spectra, of some organic and inorganic compounds, 13. theory of, 2609.

Mass spectrometer, focusing ion source for, 334. for org. comp. of high mol. wt., 2030.

use of thermionic source for, 4627. Mass spectrometry, analysis of hydrocarbons by,

inlet-system for, 3101. of lubricating oils and paraffin wax by, 3593.

of polypropylene, benzene and waxes by, 2029. application to analysis of gas mixtures containing molecules of identical mass numbers, 3594.

fundamental developments in, review, 5125. use of automatic manometer in, 1231.

for determination of substances separated by gas chromatography, 3592. in analysis, 1230, 4298.

Mayonnaise. (See also Salad cream.) detection of thickening agents in, 740. determination of fat in, 2969.

Measurement of liquids, automatic measures, for routine analysis, 4545.

graduated cylinders for, B.S.I. amendment for, 4544.

Meat, determination of connective tissue content in, 2966.

of colour of, spectrophotometric, 5429.

of fatty acids in, 5032.

of malonaldehyde in, 3988. of NO₃ in, polarographic, 742, 5015.

Meat-curing brines, determination of NO₂ in, polarographic, 4481.

Meat extracts, determination of hypoxanthine in, spectrophotometric, 4473.

Meat products, determination of colour of, spectrophotometric, 5429.

of NO₂ in, polarographic, 261.

Melamine, deriv. of, u.v. absorption spectra of, 3832

Melting-point, apparatus for measuring high-temp., 4590.

simultaneous observation of transmitted and reflected images of samples, 1626. determination, of compounds reacting with

moisture or O, 1219. improved block for, 5114.

Menaphthone, determination, in feeding-stuffs, 3539 Menthol, analysis of isomers, gas chromatographic, 4859, 5308.

Menthol-continued

determination, gas chromatographic, 3461.

in peppermint oil, 4874.

Menthyl salicylate, determination, in lemon oil, spectrophotometric, 1824.

Mepacrine, determination; 4458. Meperidine. (See Pethidine.)

Mephenesin, determination, 1905.

in plasma, spectrophotometric, 1484. in urine, spectrophotometric, 1484.

Meprobamate, detection, by u.v. fluorescence, 3483. determination, 1902, 5417.

in body fluids, spectrophotometric, 3402. in plasma, spectrophotometric, 3402.

in serum, spectrophotometric, 3402. paper chromatographic, 727. spectrophotometric, 645, 3402.

in urine, 4911.

paper chromatographic and spectrophotometric, 727.

Mepyramine, identification, in post-mortem organs, spectrophotometric, 3971.

Mercapto acids, separation, paper chromatographic,

Mercapto groups, colour reaction of, 4318. determination, 1864.

in animal tissue, amperometric, 646. in blood, amperometric, 646.

in gluten, 2963.

in proteins, 1870.

Mercaptoacetic acid. (See Thioglycollic acid.) 2-Mercaptobenzimidazole, use of, in determination

of Pd, 157, 158.

Mercaptobenzothiazole, determination, 1088. in ethanediol antifreeze, B.S.I. method for, 1104

use of, in determination of Cu and Ag, 3825. of Pd, 157, 158.

6-Mercaptopurine, determination, polarographic,

u.v. spectrophotometric, 258.

8-Mercaptoquinoline, use of, in analysis, 2595. in determination of Cu, spectrophotometric, of Mn. 514.

Mercaptosuccinic acid, use of, in determination of Pd. spectrophotometric, 1382.

of Rh, spectrophotometric, 1379. Mercuric acetate, use of, in non-aq. titrations, 1246

Mercuric chloride, standardisation of soln. of, 4635.

Mercury, analysis of, spectrographic, 3654. detection, in air, spectrographic, 4135.

in internal organs, paper chromatographic, 3977.

spectrographic, 1293. determination, 48, 402, 403, 404, 862, 906, 2053, 2086, 3709, 4150, 4771, 4853, 5166.

amperometric, 3122, 4133.

in air, 771.

in biological materials, 5346. spectrophotometric, 4902.

in blood, 5346. in brine, 5167.

polarographic, 1589.

in compounds and preparations, 2955.

in fungicides, 4037.

in mersalyl, spectrophotometric, 5007. in meteorites, radiochemical, 1040.

in natural water, polarographic, 1589. in organic compounds, 2258, 3793, 4307, 5291.

in pesticides, 1189.

in plant material, review, 3542.

Mercury, determination-continued in presence of Cu, 405.

polarographic, 907. of Ag. 5155.

in technical sodium hydroxide, 5167.

in urine, 205. photometric, 4685. polarographic, 1686.

spectrophotometric, 4151, 4686.

2-methoxyethyl-, chloride, identification of, paper chromatographic, 1971.

methyl-, chloride, identification, paper chromatographic, 1971.

polarographic oxidation of, 4235.

separation and determination of alkyl and metallic deriv. 4838.

from Bi, Cd, Cu and Pb, paper chromatographic, 2052, 2514.

from Cu, by ion exchange, 27. from Zr. 900.

of Bi from, 459.

Mercury fulminate, determination, polarographic,

Mercury, organic compounds of, determination, in plant material, review, 3542

Mercury sulphides, thermolysis of, 3717. Mersalyl, determination of Hg in, spectrophotometric, 5007.

Mesitylene, i.r. data for, 1802.

separation, chromatographic, 4350.

Mesoinositol, determination, in plasma, 3880. Metal chelates, i.r. spectra of, 2031.

of anthranilic acid and its deriv., stability of, 2031. of 2:4-dihydroxyacetophenone, composition of, 2031.

of picolinic acid, composition and stability of, 2031.

of NNN'N'-tetrakis-(2-hydroxypropyl)ethylenediamine, use of, in analysis, 2049. of tiron, stabilty of, 2031.

Metallic films, analysis of, by neutron activation, 2028

Metals, analysis of, by solvent extraction, symposium on, 4643. electrolytic, 3616.

of gases in, apparatus for, 5118. progress during the last 40 years, 3118. spectrophotometric, 2048.

behaviour of, in trace amounts, 344. detection, 3613.

in biological materials, spectrophotometric, 3861.

determination, in minerals, spectrophotometric, 2247.

of gases in, spectrographic, 3123. of H in, 355.

spectrographic, 2615.

of N in, 2157. spectrographic, 449.

of O in, 3716 radiometric, 4651.

extraction of, with diethylammonium diethyldithiocarbamate, 3614

with organic reagents, 345. liquid, determination of gases in, 797.

nitrates of, i.r. spectra of, 19.

polarographic data for, 20.

reactions of, with acylhydroxytetralin oximes, 354. refractory, determination of gases in, 15.

separation, chromatographic, 349.

surface coating on, analysis of, i.r. spectrophotometric, 4892.

system for simultaneous sampling and analysis of, spectrographic, 3563.

Metals-continued

titration of oxinates of, 3615.

transition-, extraction of, with Na₂S₂O₃, 346. pptn. of, with water-sol. plastics, 347.

Metaphosphoric acid, assay of, 2164. Metavanadates, determination, 4645.

Meteorites, determination of Bi in, radiochemical. 1040.

of elements in, by neutron activation analysis, 3776, 4753.

of Hg in, radiochemical, 1040.

of K in, mass spectrometric, 2623. of Tl in, radiochemical, 1040.

Methacrylate, monomer, identification, 4389.

Methacrylic acid, determination, in air, spectro-

photometric, 5039.
in presence of methyl methacrylate, polarographic, 1097.

esters of, i.r. spectra of, 5327. Methadone, identification, 3951.

Methaemoglobin, determination, 4965.

Methamphetamine, detection, 3462.

identification, 1901.

Methane, analysis of impurities in, gas chromatographic, 1057.

determination, apparatus for, 1628. in air, gas chromatographic, 281.

in gas mixtures, gas chromatographic, 2263. in mine air, catalyst for, 3297.

separation from H and N, gas chromatographic, 4817.

Methanol, analysis of crude, gas chromatographic,

determination, in ethanol, 2266.

in formaldehyde, densitometric, 2269. in lacquers, spectrophotometric, 5332. polarographic, 1783, 2267. gas chromatography of, 3557.

separation, from formaldehyde, 2277. Methenamine. (See Hexamine.)

Methimazole, analytical behaviour of, 1903.

Methionine, determination, 1867, 5375. in proteins, spectrophotometric, 4429.

Methocarbamol, determination, 4461. Methoxy groups, determination, 1054.

spectrophotometric, 562. separation, as alkyl iodides, from ethoxy groups and determination, 1056.

Methoxychlor, detection, chromatographic, 4533. in natural water, i.r. spectrophotometric, 2497.

2-Methoxyethylmercury chloride, identification, paper chromatographic, 1971.

Methoxyphenol, determination, 1096.

-(2-Methoxyphenoxy) propane-1: 2-diol, determination, 1905.

2-Methoxyphenylacetic acid, use of, in determination of Na, 24

Methyl dimethylbenzoates, determination, i.r. data

Methyl groups, determination, in polyethylene, 2852, 2853.

Methyl formate, i.r. spectrum of, 180.

Methyl linoleate, mass spectrum of, 755.

Methyl linolenate, mass spectrum of, 755.

Methyl methacrylate, determination, in presence of

methacrylic acid, polarographic, 1097.

Methyl methacrylate copolymers, analysis of, gas chromatographic, 4886.

Methyl 1-methylbutylidenecyanoacetate, determination, polarographic, 4828.

Methyl octadecadienostes.

determination, spectrometric, 4495.

Methyl oleate, gas chromatography of, 1393. mass spectrum of, 755.

Methyl phenyl sulphone, u.v. spectrum of, 3487. Methyl ricinelaidate, determination, i.r. spectrometric, 1577.

Methyl salicylate, determination, in non-alcoholic beverages, spectrophotometric, 2977. influence of Mg ions on u.v. absorption of.

Methylandrostenediol. diol, 17-methyl-.) (See Androst-5-ene-3:17-

Methylbenzoyl chlorides, isomeric, determination, i.r. spectrophotometric, 599.

Methylbenzyl benzoates, determination, i.r. data for, 3330

Methylcarbamic acid, phenyl ester, detection and determination, spectrophotometric, 1437.

Methylcellulose, detection, in mayonnaise, 740. determination, spectrophotometric, 1455.

Methyl-DL-cystine, determination, polarographic,

Methyldiboranes, analysis of, gas chromatographic, 3322

N-Methyldiphenylamine-p-sulphonic acid, use of, in determination of nitrate, photometric, 2031. N-Methyl-2-phenylethylamine, determination,

Acacia berlandieri, spectrophotometric, 4995. Methylene blue, use of, as indicator, in determination

of metals, 4650. fethylene groups, determination, 1405, 2260.

Methylephedrine, separation, from other drugs,

chromatographic, 3489.

4-Methylcyclohexane-1:2-dione dioxime, use of, in determination of Pd, spectrophotometric, 2742. Methylmalonic acid, determination, in urine, paper

chromatographic, 650. Methylmercury chloride, identification, paper chromatographic, 1971

N'-Methylnicotinamide, separation, electrophoretic, 2316

Methylcyclopentadienylmanganese tricarbonyl. determination of Mn in, spectrophotometric,

4-Methylpentan-2-one, transmission and reflection spectra of 2; 4-dinitrophenylhydrazones of,

Methylpentenes, separation, gas chromatographic,

Methylphenobarbitone, separation, from phenytoin, chromatographic, 3963.

Methylphenylsiloxane polymer, determination of methyl and phenyl groups in, 3849.

2-Methyl-3-piperidino-1-p-tolylpropan-1-one, determination, comparison of methods for, 4462. N'-Methyl-2-pyridone-5-carboxamide, determina-

tion, in urine, photometric, 210.

Methyltestosterone, determination, simultaneously with ethinyloestradiol, spectrophotometric, 5411. 6-dehydro-, determination, polarographic, 4104.

6-hydroxy-, determination, polarographic, 4104.

Methylthymol blue, use of, as indicator, in complexometric analysis, 3102.

Metomega chrome blue BBL. (See Dyes, C.I. Mordant blue 26.)

Mezapine, determination of base in, by ion exchange, 1167

Mica, analysis of, spectrographic, 1036. determination of K in, 4662.

isolation of radiogenic Ca from, by ion exchange, 5160

Microbiological assays, calculation of dose-response line, 3600.

of antibiotics, vitamins and amino acids, 3102, 5126. of proteins, 3102.

Microchemical analysis, British contributions to Minerals, determination—continued the progress of, review, 3102. equipment and tools for, 2033. fundamental developments in, review, 5125. organic and inorganic, 2033. proceedings of the International Symposium on, at Birmingham, 3102. standardisation of apparatus and methods used in, in U.S.A., 3102. survey of, 3102. Microscopy, applications and techniques of, 3102. fundamental developments in, review, 5125. progress in 1958, 2033. Milk, analysis of, 5430. of altered, 2452. B.S.I. method for, 2967. chromatographic and i.r. spectrophotometric, isotopic, by liquid scintillation counter, 5521. of proteins in, electrophoretic, 267. bacteriological tests of quality of, 2968. detection of alginates in, 739. of antibiotics in, 3987. determination of Ca in, 5019. of Cl- in, 733. potentiometric, 5020. of DDT in, paper chromatographic, 4474. of fat in. 263, 3504, 5017. photometric, 2453. of lactose in, spectrophotometric, 2457. of keeping quality of, use of Brilliant black BN in, 1915. of Mg in, 1564, 5019. of monoglycerides in, 264. of Se in, 3396. of Sr in, spectrographic, 42, 4398. of sucrose in, 735. of thiamine in, 1181. effect of homogenisation of, 5021. human, detection of cows' milk in, electrophoretic, 266. isolation of phospholipids from, 736. recovery of added monoglycerides from, 1916. relation between composition and viscosity, 737. separation of radionuclides in, 2458. of **Sr from Ca in, by ion exchange, 734. skim, determination of lactose in, i.r. spectrophotometric, 265. standardisation of butyrometers for, 5018. test for ketosis in, 270. Milk, evaporated, analysis of, standard methods for, Milk powder, analysis of, standard methods for, 1911. determination of Sr in, 4475. Milk products, analysis of, spectrophotometric, 1917. bacteriological tests of quality of, 2968. detection of rennet in, 3986. determination of fat in, 263. Minerals, analysis of, by X-ray powder diffraction, 2031, 5259. spectrographic, 3274. X-ray spectrographic, 2031. carbonate-, analysis of, 163. determination of ¹⁰B in, radiochemical, 909. of Cs in, spectrographic, 1265. of impurities in, radiochemical, 2031. of In in, radiochemical, 2031. of Lu in, 2031. of metals in, spectrophotometric, 2247. of P.O. in, spectrophotometric, 2247. of Re in, 2031. of Rb in, spectrographic, 1265.

of SiO₂ in, spectrophotometric, 2247.

of S in, 5219. of Tc in, 2031. of trace elements in, u.v. spectrophotometric, 2031. of U in, 3226 spectrophotometric, 2207. silicate-, determination of Li in, flame photometric, 2619. of U in, spectrographic, 488. vessel for decomposition of, 1193. Miscibility temperature, application of, to determination of acetic acid soln., 4589. use of, in determination of ethanol, 4589. Moisture, apparatus for measuring, 5520. determination, by elastic scattering of fast neutrons, 870. in barley, 3979. in coal, apparatus for, 592. in gluten, 3979. in maize, 3979. in oats, 3979. in rice, 3979. in soil, radiochemical, 1960. in starch, 3979. in tobacco, measuring device for, 2513. in wheat, 3979. in clay, automatic indicator for, 1980. Molasses, analysis of, by means of decarboxylase, 1561. colour specification for the official glass standards for, 4086. determination of phosphate in, spectrophotometric, 5011. of raffinose in, paper chromatographic, 3495, 3496 of total acid content of, by ion exchange, 3500. fractionation of sugars in, 5428. Molecular sieves, use of, as substractors, in gas chromatography, 5092. Molecular weight, determination, ebullioscopic methods for, 3082. new method for, 3611. use of thermistors in, 850, 1627. Molybdate, determination, 1312. of Sb in, photometric, 92. Molybdenite, determination of Re in, 998, 1348, 3245. Molybdenum, analysis of, spectrographic, 2202. concentrates of, determination of Re in, 520. determination, 22, 107, 482, 967, 968, 1728, 2196, 2197, 2199, 2200, 2203, 2211, 4756, amperometric, 5228. in beryllium, spectrophotometric, 5158. in beryllium oxide, spectrophotometric, 5158. in concentrates, 969. in diorite, spectrographic, 1340. in fused fluorides, 970. in granite, spectrographic, 1340. in granodiorite, spectrographic, 1340. in iron, polarographic, 145. and its alloys, 3223 in mixtures with W, by X-ray diffraction, 109. in Mo alloys, 2198. in Mo - U alloys, 2587. in presence of W, spectrophotometric, 483. in steel, 966. amperometric, 2235. containing V, 540. polarographic, 144, 145, 4104. spectrophotometric, 539, 3760. in thoria - urania slurries, 335. in thorium oxide, 335.

Molybdenum, determination-continued in tungsten trioxide, spectrophotometric, 5229. in uranium alloys, spectrophotometric, 108, 335. in zirconium, 3193.

of O in, 4748.

of Sb in, photometric, 92.

of H in, 15. of N in, 15.

of O in. 15.

of W in, spectrographic, 2205. polarographic, 2201.

spectrophotometric, 481, 867, 1729, 3224, 3225, 4242

separation, from Cu, Fe and Ni, in yttrium, 2109. from Mn, Re, Ru and Tc, 4776.

from other metals in high-temp. alloys, by ion exchange, 2056. from Te and Ba, 900.

of Re from 519.

Molybdenum alloys, analysis of Mo - Ta, 1728. of Mo - W, 1728.

determination of H, N and O in Mo - Ti, 15. of impurities in Mo - U, spectrographic, 335. of Mo in, 2198.

Molybdenum sulphides, thermolysis of, 3717.

Molybdenum trioxide, analysis of, 4758. determination of W in, spectrophotometric, 5229.

Molybdosilicic acid, polarography of, 1311, 4188. Monazite, determination of rare-earth metals in spectrographic, 4694. of Th in, 2680.

by X-ray emission spectography, 1704. spectrophotometric, 5199.

Monoglycerides, analysis of, 5272. determination, 5029.

chromatographic, 4009.

in milk, 264.

recovery from milk, 1916. Monosaccharides, determination of optical rotation of. 3803.

Montmorillonite, determination of ion exchange capacity of, 3773.

Mordant Blue 2R. (See Dyes, C.I. Mordant blue 9.) Morphine, detection, in urine, paper chromatographic, 1116.

determination, 3946.

in opium, 702, 2919. in poppy capsules, 2422. spectrophotometric, 1888.

identification, 3951. Mucopolysaccharides, determination, 5277.

spectrophotometric, 4415. Mucoprotein, determination, in gelatin, spectro-

photometric, 3918. in serum, polarographic, 4962.

(See Brass.) Muntz metal.

Muscovite, isolation of radiogenic Ca from, by ion

exchange, 5160.

Mutarotase, determination of activity of, 5396. Myelin, detection of phospholipid in, 218.

Myo-inositol, determination, spectrophotometric, 4925.

Myosin, determination of mercapto groups in, amperometric, 4986.

Naepaine, determination, as tetraphenylborate, u.v. and i.r. spectra for, 720.

Naphazoline, analytical behaviour of, 1903.
Naphazoline nitrate, assay, spectrophotometric, influence of slit width on, 700.

Naphthalene, analysis of, gas chromatographic 2809

determination, photometric, 4360. spectrophotometric, 1441.

hydroxy deriv. of, absorption and fluorescence spectra of, 1440.

methyl deriv. of, i.r. spectra of, 2312. separation, chromatographic, 2810.

Naphthalene-1:5-diacetic acid, analysis of, in presence of 1-naphthylacetic acid, chromatographic, 3541.

Naphthalenesulphonic acids, polarography of, 2811. Naphthalenic oils, analysis of, gas chromatographic,

1: 4-Naphthaquinone, detection, spectrophotometric,

determination, spectrophotometric, 1441. Naphthenes, determination of the structure of, i.r.

spectrophotometric, 2755. Naphthenic acids, differentiation from fatty and resin acids, 277.

Naphthochrome azurine B. (See Dyes, C.I. Mordant Blue 28.)
Naphthol, 1-, determination, 4855.

2-, determination, in D & C Red 36, spectrophotometric, 1454.

- and 2-, separation, chromatographic, 2810, 4361.

Naphthol AS. (See Dyes, C.I. Azoic Coupling Component 2.)

1-Naphthol, 2-acyl-5:6:7:8-tetrahydro- reactions of oximes of, with metal ions, 354.

1-Naphthol-4-sulphonic acid, determination, photometric, 3346

Naphtholsulphonic acids, paper chromatography of, 3827

1-Naphthyl methylcarbamate, determination, in agricultural crops, spectrophotometric, 2502. in apples, spectrophotometric, 5056.

2-Naphthyl sulphamate, determination, biological,

1-Naphthylacetic acid, analysis of, in presence of naphthalene-1:5-diacetic acid, chromatographic, 3541.

Naphthylamine. 2-, detection and determination, spectrophotometric, 1085.

1- and 2-, determination, photometric, 5399. 1-Naphthylamine-4-sulphonic acid, determination, photometric, 3346

Naphthylaminesulphonic acids, determination, fluorimetric, 2031.

of impurities in, paper chromatographic, 1639.

2-Naphthyloxyacetic acid, determination, in soil, u.v. spectrophotometric, 2031.

Narceine, determination, photometric, 5399. Naringin, separation, from orange peel, paper chromatographic, 5357.

Natural gas, analysis of, gas chromatographic, 1816.

Neodymium, determination, in samarium oxide, radiochemical, 4106.

of other rare-earth metals in, spectrographic, 2117.

of partition coeff. of, in tributyl phosphate-HNO₃, photometric, 3677.

reduction of, 4179 Neon. separation, from He and H, chromatographic, 4659.

Neo-oxine. (See 1-Hydroxyacridine.) Neoprene, distinction from natural rubber, by neutron irradiation, 2031.

i.r. spectra of, 2351.

Neostigmine, detection, 3462. determination, in pharmaceutical preparations, spectrophotometric, 2950.

Nickel, determination-continued

photometric, 1024.

of Zn in, spectrographic, 2239. spectrophotometric, 3270. paper chromatographic, 886, 4288.

simultaneously with Co and Cu, spectrophoto-

Nephelometer, visual, 5487. Nephelometry, measurements without calibration curves, 1233. Neptunium, determination, by ion exchange, 502. coulometric, 985. in plutonium, square-wave polarographic, 2213. of the valency states of, in soln., 3734. far i.r. spectrum of, 2212. separation, from Am, Pu and U, electrolytic, 5236. from Pu, by ion exchange, 501. use of ²³⁹Np as tracer in solvent-extraction studies, 1741. Neuraminic acids. (See also Sialic acids.) acetyl-, determination, in strandin, spectrophotometric, 3445. determination, in blood, 5385. Neuraminidase, purification and determination, 697. Neutron activation analysis, of ores, 1385. of rocks, 1385. technique of, 5522. Neutrons, long-wavelength, use of synthetic mica as monochromator for, 332. Nickel, analysis of, 545. spectrographic, 2240. chelates of, with phthalic acid, stability of, 2031. detection, 544. in brass, spectrographic, 4667. in presence of Co, 153. determination, 1023, 1375, 1376, 1764, 3267, 3268, 3633, 4650. by cementation with magnesium, 864. by electrolysis, potentiostat for, 5122. by X-ray emission spectography, 134. in air, 4510. in beryllium, absorptiometric, 2587. in beryllium compounds, 547. in cobalt, spectrophotometric, 2242. in copper, polarographic, 1766. in copper alloys, electrolytic, 3616. photometric, 351. in electroplating soln., 3272. in fatty oils, X-ray emission spectrographic, 154 in high-alloy and stainless steel, 3762. in manganese, spectrographic, 1347. in non-ferrous alloys, 3769. in plasma, spectrographic, 1108. in presence of Co and Cu, spectrophotometric, 543. of Fe, 1026. and Co, spectrophotometric, 1025. in rocks, radiochemical, 2031. in uranium, spectrophotometric, 3234, 3730. in zinc electroplating soln., photometric, 1288. in Zircaloy, spectrographic, 2146. in zirconium and Zircaloy-2, 940.

of Cd in, spectrophotometric, 3270.

of Cr in, spectrophotometric, 3221.

of Co in, by extraction, 1751. spectrographic, 2239. of Cu in, 4125.

photometric, 376.

of Fe in, 1746, 5255. by extraction, 1751.

of Pb in, 4195.

of Mg in, 3269.

of Mn in, 5255.

polarographic, 5255.

spectrographic, 2239.

of Sn in, spectrographic, 2239.

of Ca in, 3269.

metric, 150. with Fe, polarographic, 1750. spectrophotometric, 3254. spectrophotometric, 46, 546, 4287. separation, from Co, paper chromatographic, 152. from Cu, 3267. from Cu, Fe and Mo, in yttrium, 2109. from Mn, paper chromatographic, 4108. from other metals in high-temp. alloys, by ion exchange, 2056. from Zn, in electroplating solutions, 904. Nickel alloys, determination of Al and Ti in Ni - Cr, 155. of Sb in Ni - Cr, 4222. of Cd in Ni - Cr, 3652. of Ca and Mg in, 3269. of Co in, spectrophotometric, 3768. of Cu in, 4126. of impurities in, polarographic, 2243. of Ni in, 3769. in Ni - Fe, 2241. Nickel diethylphosphorodithioate, use of, in determination of Cd in magnesium alloys, 1685. Nickel(II) oxide, determination of O surplus in, 4644 Nickel tetracarbonyl, determination, in air, 4510. Nicotinamide, determination, 1549. chromatographic, 3896. spectrophotometric, 759. identification, 3951. separation, electrophoretic, 2316. paper chromatographic, 3003.

isoNicotinamidoethanol, determination, 3351.

Nicotinamidoxime, use of, in determination of Co, spectrophotometric, 1765. of U, spectrophotometric, 1341. Nicotine, detection, 3462. determination, in tobacco, spectrophotometric, 705, 1540, 4996. u.v. spectrophotometric, 704. separation of mixtures of, with pyridine, chromatographic, 5309. Nicotinic acid, detection, 3462. determination, in cereals, spectrophotometric, 1947. in food, 5461. i.r. spectrum of, 191. separation, chromatographic, 5462. electrophoretic, 2316. isoNicotinic acid, determination, 3351. in plasma and urine, 3404. spectrophotometric, 3352. 2-chloro-, i.r. spectrum of, 191. i.r. spectrum of, 191. isoNicotinic acid hydrazide. (See Isoniazid.) isoNicotinohydroxamic acid, use of, in determination of Fe, Mo and V, spectrophotometric, 867. Nicotinonitrile, determination, 2817. isoNicotinonitrile, determination, 2817. spectrophotometric, 1087. isoNicotinoylglycine, determination, in plasma and urine, spectrophotometric, 3404. 2-Nicotinoyl-2-(3-pyridyl) propane, determination, polarographic, 5009. Nicotinuric acid, determination, chromatographic, of thickness of plating of, spectrophotometric, separation, electrophoretics, 2316. Nigrosine, use of, as dye for proteins, 678.

Nikethamide, detection, 1168. determination, 3968. identification, 3951. Nile blue. (See Dyes, C.I. Basic Blue 12.) Nimonic alloy, determination of Al in, spectro-graphic, 2644. Niobium, analysis of, spectrographic, 335. concentration of, from natural water, 463. determination, 2171. in alloys, photometric, 4742. in bismuth alloys, 462. in carbide mixtures, 4201. in diabase, 3712. in gneiss, spectrographic, 3210. in granite, 3712. by isotope dilution, 4227. spectrographic, 3210. in iron, polarographic, 145. in iron alloys, 950. in Nb - Ta alloys, by oscillographic polarography, 2175. in presence of Ta, 951. spectrophotometric, 4744. of Ti, 2172. in stainless steel, spectrographic, 3264. in steel, 1760, 1960. polarographic, 145. radiometric, 537. simultaneously with W, spectrophotometric, 1335. spectrophotometric, 1013. in tantalic acid, spectrochemical, 4745. in tantalum, spectrophotometric, 2698. in tantalum pentoxide, spectrographic, 2181. in U - Nb alloys, 3212. in zirconium alloys, spectrophotometric, 1716. of B in, spectrographic, 2174. of Cd in, spectrographic, 2174. of impurities in, spectrographic, 2173. of Ta in, spectrophotometric, 96, 2180. spectrographic, 2179. of Ti in, polarographic, 2670. spectrographic, 2179. of W in, spectrographic, 2204. of Zr in, spectrographic, 2179. photometric, 949. polarographic, 3190. together with Zr, by ion exchange, 4722. extraction of, from sulphate soln., 2699. separation, from other metals in high-temp. alloys, by ion exchange, 2056. from Ta, 2696, 3211, 3713, 5215. by ion exchange, 2176. photometric, 3714. from Ti, 5215. by ion exchange, 2697. from Zr, chromatographic, 4746. of Ti from, chromatographic, 5190 together with Ta, from titanium, 4743. Niobium alloys, analysis of Nb - Ti, X-ray fluorescence spectrographic, 335.

determination of Nb, in Nb - Ta, oscillopolarographic, 2175. in Nb - U, 3212. of V, in Nb - V, spectrophotometric, 2169. Miobium ores, analysis of Ta-containing, 2700. Niobium pentoxide, determination of Ta in, 2178. spectrographic, 2181.

of Ti in, spectrographic, 2181.

Nitrate, analysis of, system for, 3700. determination, 452, 2158, 2686, 3102.

in meat, polarographic, 742, 5015.

electrometric, 1707.

Nitramines, determination, spectrophotometric, 584.

Nitrate, determination-continued in natural water, 2492, 5041. spectrophotometric, 777, 4516. in presence of NH₄+, CN⁻ and NO₃⁻, 451. in sausages, polarographic, 5015. in soil, spectrophotometric, 288, 3017. photometric, 2031. identification, with antazoline, 2688. organic, determination, spectrophotometric, 584. Nitric acid, analysis of mixtures of, with sulphuric acid, conductimetric, 5222. spectrographic, 4110. analytical methods for the inspection of, 2588. determination, in presence of Cr(NO₃)₈, 479. in H2SO4 and mixtures of, 944. of binary mixtures with H₂SO₄, HCl, H₃PO₄ and HClO₄, 868. of N in, 2158. mass spectrum of, 82. Nitrides, analysis of, 1388. determination, in steel, 1008. Nitriles, determination, spectrophotometric, 5307. Nitriloacetic acid, determination, in EDTA, polarographic, 1072, 2782. Nitrilotrisulphonic acid, determination, in mixture with iminodisulphonic acid, 1722. Nitrite, detection, reagent for, 945. determination, 83, 5206. in ethanediol antifreeze, B.S.I. method for, 1105 in meat-curing brines, polarographic, 261, 4481. in natural water, spectrophotometric, 1958. in presence of NH₄+, CN⁻ and NO₃-, 451. in sewage, spectrophotometric, 1958. in urine, 4404. spectrophotometric, 84, 1328. identification, with antazoline, 2688. Nitro compounds, aromatic, i.r. and u.v. spectra of, 3342. determination, 189, 3820. coulometric, 2800. spectrophotometric, 5307. Nitroalkanes, determination, i.r. spectrophoto-metric, 2031. Nitrobenzene, determination, by galvanic micropiles, 2610. Nitrobenzoic acid, o- and p-, analysis of mixtures of, polarographic, 188. p-, determination, spectrophotometric, 5307. Nitrocellulose, determination, 1707, 2864. i.r. spectrophotometric, 1456. of butyl phthalate in, 5337. of N in, 2158. spectrophotometric, 1830. Nitrocyclohexane, determination, 605. Nitrofurantoin, determination, in urine, polarographic, 5418. Nitrofurazone, determination, in vegetable and animal tissue, spectrophotometric, 2500. 5-Nitro-2-furfuraldehyde semicarbazone, mination, polarographic, 2951. Nitrogen, a-amino, determination, in amino acids, in plasma, c.s.f. and urine, 3427. analysis of, i.r. spectrophotometric, 3422. combustion train apparatus for, B.S.I. specification for, 1772. detection, in organic compounds, 1049. determination, 359. apparatus for, B.S.I. specification for, 3030. automatic apparatus for, 1401. in acrylic polymers, 4388. in argon, spectrographic, 4576. in beryllium, 385, 2587.

Nitrogen, determination-continued

in cast iron, 4282.

gas chromatographic, 5248.

in dichlorodifluoromethane, gas chromatographic, 570.

in faeces, 639.

in fertilisers, 1961.

in food, 639.

in helium, gas chromatographic, 335, 2517. in metals, 2157.

spectrographic, 449. in nitro compounds, 4306.

in nitrocellulose, spectrophotometric, 1830. and nitric acid, 2158.

in organic compounds, 167, 168, 1050, 1402, 1772, 1773, 2254, 2748, 2749, 3102, 3284, 3285, 3786, 3787, 3788, 3789, 3790, 4309, 4310, 4311, 4807, 4808, 5263. simultaneously with C and H, 551.

in petroleum, 1820.

in refractory metals, 15. in steel, 1365, 4282, 4788.

gas chromatographic, 5248.

spectrographic, 3754. in titanium, 77, 1320.

in titanium alloys, 77.

in uranium nitrides, 1740.

in zirconium and its alloys, spectrophotometric, 938.

of O in, photometric recording apparatus for, 4571

luminescence spectrum of, 3612.

separation, from H and CH4, gas chromatographic, 4817.

Nitrogen dioxide, determination, in air, 4017. u.v. spectrophotometric, 4214.

Nitrogen oxides, analysis of, system for, 3700. detection, in coke oven gas, automatic apparatus for, 3367.

determination, 83.

Nitrogen trifluoride, separation, from CF4, gas chromatographic, 2159.

Nitroglycerin, determination, 1707. polarographic, 3855.

Nitroguanidine, determination, 5335.

Nitrometer, B.S.I. specification for, 4042. simplified, for use in the Dumas determination, 3026

Nitromethane, determination, in presence of nitrite,

Nitron hydrochloride, use of, as extraction indicator, in acid-base titrations, 1647, 2046.

Nitroparaffins, determination, 1797.

chromatographic, 1070. spectrophotometric, 2286. gas chromatography of, 2778.

Nitrophenol, p-, determination, in urine, spectro-photometric, 4915.

4-Nitrophenylarsonic acid, separation, paper chromatographic, 2806.

Nitroso compounds, determination, 189, 3820.

spectrophotometric, 5307. reaction for, 3797.

1-Nitroso-2-naphthol, u.v. spectrum of, 606.

Nitroso-SNADNS, use of, in determination of Th, spectrophotometric, 1327.

Nitrotoluenes. (See Toluene.)

Nitrous oxide, determination, in air, 772. of O in, spectrophotometric, 4747.

Noradrenaline, determination, fluorimetric, 3893. in blood, spectrofluorimetric, 662.

in plasma, 4938.

in tissues, 4938.

Noradrenaline,—continued separation, from adrenaline, in urine, paper electrophoretic, 5409.

Nordihydroguaiaretic acid, separation, paper chromatographic, 1579.

Novalgin. (See Sodium noramidopyrine methanesulphonate.)

Novocaine, (See Procaine.)

Novolaks, determination of resin content of, 199. Nuclear magnetic resonance, in solids, review, 3589.

Nuclear reactor materials, analysis of, methods and equipment for, 3103.

recent developments in, 3119. use of radiofrequency in, 3103.

of remote operational facilities in, 3103. determination of U in, by isotope dilution, 3103.

Nucleic acids. (See also Deoxyribonucleic acid.) determination, spectrophotometric, 667, 2389,

separation, electrophoretic, 4970.

Nucleosides, determination, in cod muscle, spectrophotometric, 4435.

separation, chromatographic, 4969. paper chromatographic, 222.

Nucleotides, guanine, separation and identification, paper chromatographic, 666.

pyridine, determination, fluorimetric, 3446. u.v. spectra of, 223.

separation, by ion exchange, 3922. paper chromatographic, 222, 4969. Nuclides. (See Radioactive isotopes.)

Nutrient media, determination of O below the surface of, use of the dropping mercury electrode for, 2579.

Nux vomica, determination of alkaloids in, 2423. Nylon, chromatography of, survey, 3035. determination, in blends with cotton, 3378.

of moisture in, 3379. identification, circular paper chromatographic,

2848. Nystatin, assay of, 251.

OH-SNADNS, use of, as reagent for Th, spectrophotometric, 4725.

Oats, determination of moisture in, 3979. Octahydro-1:3:5:7-tetranitro-sym.-tetrazine, termination, in mixtures with hexahydro-1:3:5trinitro-sym.-triazine, spectrophotometric, 632.

isoOctyl alcohol, separation, from butanol, chromatographic, 3801.

Oestradiol, determination, in plasma, paper chromatographic, 234. in urine, chromatographic, 5388.

spectrofluorimetric, 689. spectrofluorimetric, 4975. oscillographic polarography of, 2903.

Oestriol, determination, in plasma, paper chromatographic, 234.

in urine, chromatographic, 5388. spectrofluorimetric, 689. spectrofluorimetric, 4975.

Oestrogens, determination, in urine, chromatographic, 5388. paper chromatographic, 235, 2412.

spectrofluorimetric, 689. enhancement of fluorescence by phosphoryl

chloride, 2413. Oestrone, determination, 3923.

in plasma, paper chromatographic, 234. in urine, chromatographic, 5388. spectrofluorimetric, 689. spectrofluorimetric, 4975.

Ointments, analysis of, radiometric, 2958.

determination of Ca and S in, radiometric, 4467.
of benzoic and salicylic acids, assay of, spectrophotometric, 4468.

Oleandomycin, assay of, 708. determination, in bile, 1846. in feeding-stuffs, 5481. in urine, 1846.

spectrophotometric, 2934.

Olefins, analysis of, mass spectrometric, 2772.
determination, in air, spectrophotometric, 2754.
separation, paper chromatographic, 3799.

Olive oil, analysis of, i.r. spectrophotometric, 3515.

review of methods for, 1938. u.v. spectrophotometric, 276. classification of, by u.v. spectrophotometry, 2475.

dependence of iodine value on treatment of, 5033.

detection of additions of rectified oils to, spectrophotometric, 2478.
of foreign oils in, paper chromatographic,

of foreign oils in, paper chromatographic 2481.

of grape-seed oil in, paper chromatographic, 1940. of tea-seed oil in. 2994.

modification of the Fitelson reaction for, 5447.

determination of acid value of, 751. of aldrin and dieldrin in, 792.

of diazinon in, spectrophotometric, 5448.

of fatty acid composition of, 3516. of iodine value of, 1574, 5030. of saponification value of, 750.

differentiation, between rectified-B and oil prepared from fatty acids, 1939.

distinction between refined and unrefined, spectrophotometric, 2474, 4008.

of types of, u.v. spectrophotometric, 752. evaluation of, u.v. spectrophotometric, 2476, 5446. studies on, spectrofluorimetric, 5034. sulphur, determination of impurities and oxidised

acids in, 753.

Omega Chrome Black Blue G. (See Dyes, C.I.

Mordant Black 38.)

Omega Chrome Blue Green BL. (See Dyes, C.I. Mordant Green 34.)

Omega Chrome Fast Blue 2G. (See Dyes, C.I. Mordant Blue 44.)

Opal, determination, in rocks, 1037.
 Opium, detection, chromatographic, 1889.
 determination of morphine in, 702, 2919.

Opium alkaloids, determination, in urine, 4911.
paper chromatographic, 701.

Optical rotary dispersion, automatic recording of, with a spectropolarimeter, 3575.

Orange G. (See Dyes, C.I. Acid Orange 10.)
Orange juice, determination, in beverages, 745, 1925.
Orange all determination of citral in spectrophoto.

Orange oil, determination of citral in, spectrophotometric, 3846.

Orange peel, determination of dyes on, spectro-

photometric, 5436. identification of flavanones in, paper chromatographic, 5357.

separation of flavonone glycosides in, paper chromatographic, 5357.

Ores, analysis of, spectrographic, 3275.
determination of Fe in, amendment to B.S.I.

standard for, 1356.
of quartz in, i.r. spectrophotometric, 1038.

neutron activation analysis of, 1385. pyritic, determination of Se in, 106.

sulphide, determination of Se in, spectrophotometric, 3720. Organic acids, α-keto, determination, in c.s.f., spectrophotometric, 1850.

analysis of, paper chromatographic, 2527.

aromatic, separation, paper chromatographic, 4848.

detection. paper chromatographic, 1790. determination, in air, 3527.

in cane sugar juice, paper chromatographic, 2448.

of O in, 1403.

high-voltage paper electrophoresis of, 2280. identification, 3312.

separation, from amino acids and sugars, by ion exchange, 2383.

titration of, with tetraethylammonium hydroxide,

weak, determination, conductimetric, 579. spectrophotometric, effect of solvent on, 3343.

Organic analysis, developments in, 4296. methods for, 3102.

Organic bases, analysis of, 2287.

detection, in urine, paper chromatographic, 1116. determination, by ion exchange, 1167. conductimetric and potentiometric, 1798.

photometric, 3810.

spectrophotometric, 1888.

with Na tetraphenylboron, review, 851. titration behaviour of, in nitromethane, 2288.

Organic compounds, analysis of, micro-, review, 1770, 1771. review, 5125.

Organic compounds, determination, i.r. spectrophotometric, 563.

of -C: C- bonds in, 2752. of 14C and 3H in, 564.

of unsaturation of, 1052. coulometric, automatic, 171.

gas chromatography of, 1393. relationship between side-chain length and $R_{\rm M}$ values of, 1394.

retention indices for, calculation of, in gas chromatography, 2535.

separation of impurities from, 166.

solid, analysis of, i.r. spectrophotometric, 165. tritiated, analysis of, radiometric, 4300.

determination of radioactivity of, by liquid scintillation counting, 4802.

Organic compounds, determination of elements in. (See also under individual elements.) by combustion, automatic regulator for, 319. combustion apparatus for, automatic, 5117. design of Schöniger flask for, 5068.

developments in, review, 4296. weighing of volatile liquids in, 4542.

Organic compounds, determination of functional groups in,. (See also under individual groups), 2033, 3102.

Organic matter, oxidation of, application to textiles, 1396.

with HClO4, 5139.

determination of losses of trace elements in, radiochemical, 3102.

Organic peroxides, analysis of, review, 3104.

Ornithine, separation, paper chromatographic, 1505.

Orosomucoid, determination of sialic acid in, electrophoretic, 2899.

Orotic acid, determination, spectrophotometric and microbiological, 714.

Orphenadrine, identification, 2918.

Osmium, determination, 4797. spectrographic, review, 1377.

spectrophotometric, 1031, 1383, 1767, 2244, 5257.

identification, 160.

Osmium tetroxide, use of, as catalyst, in alkaline media, 4638.

Ovalbumin, determination of mercapto groups in, 231.

Ovomucin, determination of S in, 2031.

Oxalic acid, analysis of, 4090.

critical soln. temp. of, with some systems, 4826. determination, 1793, 2284.

dihydrazide, determination, 2293.

oxidation of mixtures of, with citric acid, 4827. Oxalyldihydrazide, use of, in analysis, 4125.

Oxazolines, reaction of, with nitrous acid, 4368. Oxidase, monoamine, assay of, spectrophotometric,

quinine, assay of, in serum, spectrophotometric, 1529.

Oxine. (See 8-Hydroxyquinoline.)

11-Oxoaetiocholanolone. (See 5β-Androstane-11: 17dione, 3x-hydroxy-.)

(See 5-x-Androstane-11:17-11-Oxoandrosterone. dione, 3a-hydroxy-.)

2-Oxo-3-deoxygluconic acid, detection, 4927.

α-Oxoglutaric acid, determination, in body fluids, spectrophotometric, 1491.

Oxonol dyes, use of, as reagents for Ag, 2031. Oxophenarsine, d analysis, 3488. determination, by activation

17-Oxosteroids. (See Steroids.) Oxycodone, identification, 2918.

Oxygen, continuous measurement of dissolved, in natural water, apparatus for, 2584.

determination, 1717 below the surface of nutrient media, 2579.

continuous, 464. electrometric, 3715.

in aluminium, by vacuum fusion, 52.

in aluminium bronze, 1690. in beryllium, 386, 1673.

by activation analysis, 4137.

in biological fluids, 5340. in blood, electrochemical, 4895.

polarographic, 2355. spectrophotometric, 4395.

in boiler water, coulometric, 1959.

in CO and CO₂, mass spectrometric, 4185. in cast iron, gas chromatographic, 5248.

in chromium, 3222. in chromic oxide, 3716.

in dichlorodifluoromethane, gas chromatographic, 570.

in electrodes, 5218.

in fuel, 1091.

in gases, apparatus for, 292.

in helium, gas chromatographic, 335, 2617.

in inorganic compounds, 2182.

in metals, 3716.

in molybdenum, 4748.

in natural water, 3529, 3530, 3531, 4021, 4022. in nitrogen, photometric recording apparatus for, 4571.

in nitrous oxide, spectrophotometric, 4747.

in organic compounds, 1048, 1403, 2252, 2745, 4308.

containing S, 553.

in refractory metals, 15. in sodium, i.r. spectrophotometric, 4661.

in soil, 1188.

in steel, 1366, 1367, 1368, 4788. gas chromatographic, 5248.

in tantalum, 4748.

in titanium, 77, 1320. by platinum-flux technique, 936.

by vacuum fusion, 435.

in titanium alloys, 77.

Oxygen, determination-continued

in Ti - Mn alloys, 952.

in titanium oxide, 3716. in tungsten, 4748.

in vanadium, spectrographic, 5214.

in Zircaloy, 2145.

in zirconium, 441, 2145.

in zirconium oxide, 3716.

dissolved, determination, in boiler water, apparatus for, 1955.

luminescence spectra of, 3612.

self-sampling indicator tube for, 5486.

Oxytetracycline, identification, photometric, 1895. Oxytocin, determination, paper chromatographic, 3479

Ozone, determination, 2759, 4228.

PA 155A (antibiotic), chemical and physical properties of, 5413.

(See Picolinaldoxime methiodide.)

PAN. [See 1-(2-Pyridylazo)-2-naphthol.]

(See 2-Hydroxyiminomethyl-N-methylpyridinium methanesulphonate.)

(See Copper phthalocyaninetetrasulphonic acid.)

Paint, analysis of, 1465.

determination, of Pb in, 5331.

of whiteness of, reflectometer for, 4087. driers for, determination of Zr in, 1325.

water emulsion, analysis of, 5330.

Paint driers. (See also individual compounds.) analysis of, 627.

determination of metals in, flame photometric, 201.

Palladium, detection, 156 determination, 159, 1028, 2031, 2740, 3268, 3771, 4285, 4291, 5256.

amperometric, 158, 2741, 3126.

atomic absorption spectrometric, 353.

in ores and concentrates, 1032.

in silver, spectrographic, 1274. in Th - U alloys, 335.

in uranium alloys, spectrophotometric, 335. simultaneously with Rh, spectrophotometric, 1379.

spectrographic, review, 1377.

spectrophotometric, 157, 1027, 1029, 1030, 1382, 2742, 3273, 4292, 4791, 4796.

isolation of, from concentrates, 4792. separation, from Ru, spectrophotometric, 4289. spot test for, 3770.

use of 100mPd in neutron activation analysis, 1016. Pancreatic extracts, determination of the elastolytic activity of, spectrophotometric, 2915.

Panthothenic acid, determination, 4504. in biological fluids, 3884.

microbiological, 1182.

Papaverine, determination, polarographic, 5402. separation, from other drugs, by ion exchange, 3965.

Papaverine hydrochloride, determination, spectrophotometric, influence of slit width on, 700.

Paper, determination of Cl in, 3373. of pH of, 3371.

of starch in, comparison of methods for, 3372.

of synthetic fibres in, 622.

of whiteness of, reflectometer for, 4087. filter-, determination of Be in, fluorimetric, 387. identification of materials in, 4883.

photographic, determination of Ag in, 1457.

Paper pulp, determination of Cl in, 3373. of lignin in, comparison of methods for, 621. spectrophotometric, 1832.

identification of materials in, 4883.

Paraffin. soft. determination of "bleeding number"

Paraffin wax, analysis of, mass spectrometric, 3593. determination of impurities in, gas chromatographic, 2829. Para-oxon, detection and determination, polaro-

graphic, 790.

Parathion, determination of p-nitrophenol, in urine, as a measure of exposure to, spectrophotometric, 4915. photometric, 2505.

Parathion-methyl, detection and determination, polarographic, 790.

Pastes, alimentary, detection of malt in, 1173. determination of egg in, spectrophotometric, 5016.

Patent blue V. (See Dyes, C.I. Acid Blue 1.)

Peanut oil. (See Arachis oil.)

Pectin, analysis of, standard method for, 1911. determination, spectrophotometric, 5023. Pelentan. (See Ethyl biscoumacetate.)

Penicillin, assay of, 708, 3473, 3474. effect of storage at 5°, 3955.

determination, in fermentation media, spectrophotometric, 2431.

in poliomyelitis vaccine, 3956. in urine, amperometric, 4910. spectrophotometric, 2933.

procaine-, determination, in feeding-stuffs, 3538. spectrophotometric, 2031.

Penniclavine, detection, by u.v. fluorescence, 3468. entaborane, analysis of, 3155.

Pentachlorophenol, analysis of, B.S.I. method for,

determination, in air, 4019.

Pentacyanoferrates, use of, in analysis, chromatographic, 2031.

cycloPentadienylmanganese tricarbonyl, determination of Mn in, spectrophotometric, 3838.

Pentaerythritol tetranitrate, determination of dipentaerythritol hexanitrate in, 2353. of thermograms of, apparatus for, 321.

polarographic, 1840 Pentafluoroethyl halides, i.r. and Raman spectra of,

3:5:7:3':4'-Pentahydroxyflavanone. (See Dihydroquercetin.

Pentamethylenedithiocarbamic acid, Na salt, use of, in titration of Rh, 2739.

Pentane, determination, in petroleum, gas chromatographic, 4862. cycloPentane, alkylidene-, separation, gas chromato-

graphic, 1438. ethylidene- and methylene-, i.r. spectra of, 2807.

n-Pentanethiol, separation, from ethanediol, paper electrophoretic, 1060. cycloPentanone, carbonyl- stretching frequency of,

3818 determination, paper chromatographic, 3334.

cycloPentene, alkyl deriv. of, separation, gas chromatographic, 1438. ethyl deriv. of, i.r. spectra of, 2807.

Penthrite, determination, 5335.

Pentobarbitone, identification, in blood, u.v. spectrophotometric, 252.

Pentose, determination, in agricultural products, paper chromatographic, 1591. in plasma, spectrophotometric, 1847.

isoPentyl phenylaminoacetate, analytical behaviour

Peppermint oil, determination of menthol in, 4874.

Pepsinogen, determination, in urine, 239.
Peptidase, determination, spectrophotometric, 4982.
Peptides, determination, 5377.

of amino acids in, 2896.

separation, from amino acids, paper chromatographic, 3429.

paper chromatographic, 3436. enzoic acid, use of, in analysis, 2050.

Perchlorate, determination, 129. in presence of chlorate, 4772.

Perchloric acid, determination of binary mixtures with H2SO4, HNO3, HCl, and H2PO4, potentiometric, 868. use of, in voltammetry, 4141.

Perfluoromethylcyclohexane, analysis of, gas chrom-atographic, 3735.

Perhydrol. (See Hydrogen peroxide.)

Periodate, detection, in presence of iodate, 5243. determination, 3243.

in presence of iodate, bromate and chlorate, 3739. Periodic acid, use of, in destruction of organic matter, 5139.

Permanganate, mechanism of KMnO4 - Fe(II) - Clsystem, 132.

Peroxidase, detection, electrophoretic, 2415. determination of activity of, in tobacco, 694.

Peroxides, aliphatic, detection and separation, 4321. detection, in fatty oils, 1943.

diacyl-, determination, potentiometric, automatic, 193.

dialkyl-, identification, paper chromatographic,

hydroxyalkyl-, identification, paper chromatographic, 465. organic, determination, 1782.

Peroxy-acids, identification, paper chromatographic,

Peroxy groups, detection and determination, 2753.

Persulphate, determination, 2190, 2705. Perthane, determination, 1975.

Perylene, detection, 2301 Pesticides. (See also individual compounds.)

chlorinated, detection, in natural water, i.r. spectrophotometric, 2497. i.r. spectrophotometric, 2497.

determination, 5055. detection, in food, 2974.

determination of Hg in, 1189.

of phorate in, chromatographic, 4539. of total organic chlorine in, 3019.

identification, in mixtures, i.r. spectrophotometric, 4033.

paper chromatographic, 3020. organophosphorus, analysis of, 4034. paper chromatographic, 4035.

Pestox. (See Schradan.

Pethidine, detection, 3462. Petrol, analysis of, mass spectrometric, 614, 5312. bomb calorimetry of, conditions for combustion,

determination, in natural gas, gas chromatographic, 2320.

of Pb in, flame photometric, 2823.

of Mn in, flame photometric, 2823. spectrophotometric, 3838.

X-ray emission spectrographic, 1443.

of P in, spectrographic, 4866. of tetraethyl-lead in, 2824, 3837.

Petrolatum. (See Paraffin, soft.) Petroleum, analysis of, 3356.

by Raman spectra, 2607. gas chromatographic, 2321, 4863. use of coated capillary columns in, 2537.

X-ray emission spectrographic, 4370.

Petroleum-continued

determination of As in, spectrophotometric, 1821, 1822, 3359.

of bromine number of, 5313.

of Cl in, by X-ray fluorescence, 3360. potentiometric, 4369.

of dissolved gases in, gas chromatographic,

of N in. 1820.

of pentane in, gas chromatographic, 4862. of porphyrins in, spectrophotometric, 3839. of S in, by X-ray fluorescence, 3360.

of tetraethyl-lead in, polarographic, 615.

separation, chromatographic, 1090. Petroleum coke, analysis of, 3363.

determination of Fe and V in, spectrographic, 2827

Petroleum products, analysis of, 2322.

fluorimetric, 836.

determination, of aliphatic sulphides in, spectrophotometric, 2323.

of peroxides in, automatic, 193. of S in, 2746, 4864, 4865, 5314. apparatus for, 5119, 5315.

of water in, by Karl Fischer method, 2324. Petroleum residues, determination of porphyrin in,

pH, determination, B.S.I. specification for meters,

841. capillary electrode for, 3089. glass electrodes for, 2582. high-pressure electrode for, 1222. in blood, apparatus for, 2581. instrument for, 5517.

Pharmaceutical analysis, application of gas chromatography to, 3461.

use of radioactive isotopes in, 1885.

Pharmaceutical preparations, components of the total water content of powders etc., 2444.

Phenacetin, determination, potentiometric, 1162. spectrophotometric, 1898.

identification, in animal tissue, 4405.

Phenacyl chloride, determination, spectrophotometric, 5303.

Phenaglycodol, determination, 3305. in urine, spectrophotometric, 1845.

1:10-Phenanthroline, complexes and derivatives of, for use in selective extraction, 860.

determination, u.v. spectrophotometric, 3834. Phenazine, separation, paper chromatographic, 3831.

Phenazocine, identification, 1547.

separation, paper chromatographic, 1547. Phenazone, determination, 255, 3809.

amperometric, 5003. by ion exchange, 2435.

in plasma, spectrophotometric, 2354. photometric, 5399.

spectrophotometric, 1888.

identification, in animal tissue, 4405.

separation, from alkaloids, by ion exchange, 3965. titration of, use of photometric indicator in, 3809.

Phenergan. (See Promethazine.)
Phenidone. (See 1-Phenylpyrazolid-3-one.)

Phenobarbitone, determination, 2434. spectrophotometric, 718, 3481. u.v. spectrophotometric, 5415.

separation, from carbromal, chromatographic, 3963.

Phenol, analysis of, gas chromatographic, 5297. of products manufactured from, 3815. determination, 1431.

in urine, 2364. polarographic, 1080. Phenol, determination-continued spectrophotometric, 4353, 5296.

i.r. spectrum of, 5300.

2:4:6-trichloro-, determination, spectrophotometric, 4846.

Phenolic acids, analysis of, 3313.

Phenols, analysis of, gas chromatographic, 1806. review, 595, 3104.

C, to C14 alkyl-, separation, paper chromatographic, 3816.

chloro-, separation, by ion exchange, 5301.

chromatography of, 2793.

colour reactions of, with Ehrlich's reagent, 1430.

detection, 2301, 3331, 4822. determination, 1096.

conductimetric, 579. in coal tar, 1835.

of acidities of, in pyridine and water, 4844. u.v. spectrophotometric, 2795.

dihydric, determination, gas chromatographic, 1433.

in sewage, 4029. halogenated, separation, paper chromatographic, 4845.

identification, 4356. in coal tar, 4867.

i.r. spectra of, 5300.

paper chromatography of, 3330. paper electrophoresis of, 3330, 5299.

polyhydric, determination, spectrophotometric, 186, 1808.

separation, by ion exchange, 2794. chromatographic, 806. gas chromatographic, 2796.

paper chromatographic, 2305, 5298. u.v. absorption spectra of, 1805, 2306.

Phenolsulphonic acids, determination, chromatographic, 1462. differentiation of, from phenyl hydrogen sulphate, 4851.

Phenothiazine, deriv. of, determination, spectrophotometric, 2436.

detection, in urine, 3874. size analysis of, 3482. u.v. spectrum of, 2031.

Phenoxathlin, determination, u.v. spectrophoto-metric, 2031.

Phenoxides, alkali, analysis of soln. of, 3817.

Phenoxyacetic acid, deriv. of, analysis of, i.r. spectrophotometric, 598. paper chromatography of, 1084.

2:4-dichloro-, use of, in inorganic analysis, 5128. 2:4:5-trichloro-, use of, in inorganic analysis, 5128.

Phenyl esters, detection, 3332. Phenyl ethers, detection, 3332.

Phenyl hydrogen sulphate, differentiation of, from phenolsulphonic acid, 4851.

Phenyl methylcarbamate, detection and determination, spectrophotometric, 1437.

Phenyl 2-pyridyl ketoxime, use of, in detection of Au. 31.

in determination of Au, spectrophotometric, 1277. of Fe, 3250.

Phenyl thiocyanate, Raman and i.r. spectra of, 4852

Phenylacetaldehyde, separation, paper chromatographic, 596.

Phenylalanine, determination, in casein hydrolysates, 3434. in presence of tyrosine and trytophan, polaro-

graphic, 5372.

Phenylalanine continued

identification, in urine, paper chromatographic,

N-Phenylanthranilic acid, use of, as indicator, 2600. 4-Phenyl-2: 6-bis-(4-phenyl-2-pyridyl) pyridine, spectrophotometric constants of chelates with Fe^{II}, Cu^I and Co^{II}, 2031.

Phenylchlorosilanes, determination, gas chromatographic, 4890.

Phenylenediamine, determination, in hair dyes, 3848. dihydrochloride, determination, polarographic, 3821.

identification, 4358.

o- and p-, determination, potentiometric, 1436. -, identification, in hair dyes, 1826.

p-Phenylenedilithium, determination, potentiometric, 2805. m-Phenylenedioxyacetic acid, use of, in deter-

mination of Th, 446.

Phenylethyl alcohol, determination, 4877.

Phenylglutarimide, determination, 1900.
Phenylhydrazine, determination, potentiometric,

stabilised, for identification of sugars, 2035. Phenyl-lithium, determination, 4803.

Phenylmercury acetate, determination, 722. separation and identification, paper chromatographic, 1971.

Phenylmercury compounds, determination, 4854. 1-Phenyl-3-pyrazolidone, analysis of, B.S.I. method

Phenyl-2-pyridylmethanol, composition of complexes with Cu, 2031.

Phenylpyruvic acid, detection, in urine, 3881, 3882,

determination, in urine, 1490. spectrophotometric, 653.

Phenylsulphonyl derivatives, i.r. spectra of, 2311. 1-Phenylthiosemicarbazide, and deriv. of, use of, in

determination of Cu, 371. use of, in analysis, 402, 481, 1027. 1-Phenylpyrazolid-3-one, determination, 1101. Phenytoin, determination, in tablets, 3964.

separation, from methylphenobarbitone, chromatographic, 3963.

Pholcodine, identification, paper electrophoretic, 5403.

Pholedrine, determination, by ion exchange, 1167. Phorate, determination, in pesticides, chromatographic, 4539.

spectrophotometric, 4536. Phosdrin, determination, in plants, photometric, 290. Phosgene, detection, in air, 5040.

determination, 1058.

Phosphatase, alkaline, determination of activity of, 4979, 4985.

in serum, spectrophotometric, 2417. prostatic acid-, assay of, 2418.

serum-, starch gel electrophoresis of, 4978. Phosphate. (See also Phosphoric acid; Phosphorus; Phosphorus compounds; Phosphorus, oxyacids

of; Polyphosphates.)

detection, on chromatograms, 2160. determination, 453, 454, 947, 1710, 2162, 2163, 3200, 3701, 3702, 4217, 4732, 4733, 4734,

5207. in biological tissue, spectrophotometric, 3392. in minerals, spectrophotometric, 2247.

in natural water, 778.

in presence of arsenate and silicate, spectrophotometric, 455.

of sulphate, 89. in soil, by isotopic dilution, 1592. in urine, photometric, 2873.

Phosphate, determination-continued

indirect, flame photometric, 11. of inorganic, in presence of acid-labile P compounds, 1711.

of pyrophosphate in, chromatographic, 88. of U in, polarographic, 2209, 3227.

paper chromatographic, 87.

with safranine, spectrophotometric, 1329. separation of ortho- from other phosphates, 4734.

Phosphates, analysis of mixtures of, paper chromatographic, 86.

Phosphatides, detection, paper chromatographic, staining agent for, 217. determination, in fatty oils, chromatographic.

5444.

in serum, 5362. i.r. spectrophotometric, 1499. paper chromatographic, 5365.

spectrophotometric, 1877. from milk, determination of fatty acids in, 736. identification, in biological samples, 5363. of rabbit skin, chromatography of, 5364.

separation, paper chromatographic, 5361. slit-feeding apparatus for, 4557. Phosphine, methyl- and silyl-, i.r. spectra of, 192.

Phosphite, dialkyl, determination, spectrophoto-metric, 4834. determination, 4645.

Phospholipase B, determination of activity of, 3934. Phospholipids. (See Phosphatides.)

Phosphorescence, use of, in analysis, 2013.

Phosphorescent papers, use of, in analysis, 2031.

Phosphoribosyl pyrophosphate amidotransferase, determination of activity of, 1534.

sphorus. (See also Phosphate; Phosphorus compounds; Phosphorus, oxyacids of.) Phosphorus. determination, 2161.

Phosphoric acid, determination, 2161. in biological materials, by solvent extraction, 2358.

in plant materials, 5351

in presence of HF and H₂SiF₄, 991.
of binary mixtures with H₂SO₄, HNO₃, HCl and HClO₄, potentiometric, 868. of Ca in, 1282.

spectrophotometric, 4216.

Phosphoric acid esters, detection, by u.v. fluorescence and paper chromatography, 657. determination, paper chromatographic, 2298. separation, by ion exchange, 2789.

paper chromatographic, 4929.

Phosphorimetry, application to chemical analysis, 2031.

Phosphorite, determination of Zr in, spectrophotometric, 440.

Phosphors, use of poisoning of, in analysis, 1643. (See also Phosphate; Phosphorus Phosphorus. compounds.)

determination, 1711, 4092, 4730, 4731.

in blood, 1112

in cast iron, 1012.

in coal and coke, B.S.I. method for, 2831. in Cu alloys, B.S.I. method for, photometric,

5152. in faeces, 639. in fertilisers, 1962, 1964, 1966.

spectrophotometric, 1963. in food, 639.

in fuel ash, photometric, 85. in hydrogen peroxide, 1259.

in iron alloys, by ion exchange, 1015.

in lipids, 2381.

in lubricating oil, spectrophotometric, 1444.

in ores and minerals, 946.

Phosphorus, determination-continued

in organic compounds, 554, 1051, 2257, 3793, 3942, 4813.

in petrol, spectrographic, 4866.

in presence of Si, 923. in serum, 3393, 5362.

spectrophotometric, 5350.

in steel, 3756.

spectrophotometric, 1012, 2233, 3262.

in vanadium, 1334.

in vanadium steel, 1759, 3755.

spectrophotometric, 1708, 2031.

together with As, in steel, spectrographic, 3263. separation, by solvent extraction, 1709. yellow, determination of S in, 954.

Phosphorus compounds, inorganic, i.r. spectra of, 3703.

organic, determination, 4342.

separation of amino acids from, paper chromatographic, 4945.

of sugars from, paper chromatographic, 4945. Phosphorus, oxyacids of. (See also Phosphate.)

detection of esters of, 4835.

Photographic film, analysis of gelatin layers in, spectrographic, 1102.

Photometer, comparison of commercial instruments, 2011.

for use in the 355-m µ region, 1215.

Photometer, flame, Zeiss-Jena, isolation of spectral bands by, 4573.

Photometry. (See Absorptiometry.)

Photometry, flame. (See also Spectrophotometry, flame.

applications, in analysis, 3057, 3102. assembly for filtering soln. in, 2571.

factors affecting emission intensities, 3573.

further possibilities of, 4641.

interference by the Cr - Co - Mn system, 2031. internal standardisation in, 634.

mechanism of, and elimination of interferences in, 37.

mutual cation interference effects in, 3574. review of progress in, 857.

simplified calibration for, 1619.

sources of error in, and methods for their elimination, 305.

temp. effects in, 2031.

use of indirect methods in, 11.

of organic solvents in, 4574, 4643, 5103. of a photomultiplier in, 2570.

of standard-addition technique in, 4577. Phrenosine, identification of 2-hydroxystearic acid in, chromatographic, 216.

Phthalic acid, detection, 2799.

determination, u.v. spectrophotometric, 1434. separation, paper chromatographic, 3336.

isoPhthalic acid, determination, in synthetic alkyd resins, 3852

separation, paper chromatographic, 4848. Phthalocyanines, determination, 2330.

Physical constants, determination, on reduced scale, 2033

Physostigmine (eserine), detection, 3462. determination, spectrophotometric, 3463.

Pickling liquor, determination of NaCl in, 3738. Picolinaldoxime methiodide, analytical data for,

3111. Picoline, α-, determination, in pyridine, 1086. analysis of, 1815.

y-, determination, spectrophotometric, 3352. Picolinic acid, i.r. spectrum of, 191.

metal chelates of, composition and stability of, 2031.

Picric acid, colour reaction and absorption maxima of, 1811.

staining of, for observing crystal form, 5338.

Pigments. (See also Plant pigments.) extraction, from plants, 1126.

organic, detection, 1093. determination, spectrophotometric, Pilocarpine, 1888, 5406.

Pinakryptol yellow, use of, in identification of arylsulphonic acids, 3344.

Pine oils, analysis of, gas chromatographic, 1451.

Pinene, α-, determination, 2314. gas chromatography of, 1393.

β-, analysis of, 4858.

gas chromatography of, isomerisation in, 2814.

Pipadrol, determination of bases in, by ion exchange, 1167.

identification, 3951.

Piperazine, determination, 1555, 2815. spectrophotometric, 1908.

9:2'-Piperidinoethylxanthen, determination of xanthone in, polarographic and spectrophoto-metric, 1884.

Piperidinomethyltolylpropanone. (See 2-Methyl-3-piperidino-1-p-tolylpropan-1-one.)

Piperidinium bromide, determination, 3972. Piperidolate, determination of bases in, by ion

exchange, 1167. Piperocaine, detection, oscillopolarographic, 1163. determination as tetraphenylborate, u.v. and i.r.

spectra of, 720. Piperonal, determination, spectrophotometric, 1435.

Pipette, automatic, 4040.

device for volumes of 10-4 ml, 5063.

for use in micro-deproteinisation, 1194. fractionating, 4555.

micro-, polyethylene, 2511.

multiple, design for, 4041. remote control, for highly radioactive samples, 3103.

with automatic refill, 5064.

Pitch, determination of phenolic hydroxyl groups in, 1053.

of V in, spectrophotometric, 1715. Pitchblende, determination of Ra in, 2638.

Placentae, determination of 4-allyl-NN-diethyl-2methoxyphenoxyacetamide in, spectrophotometric, 4914.

Plantago spp., determination of aucubin in, paper chromatographic, 4457.

Plant pigments, separation, paper chromatographic, 649.

Plant tissue. (See also Biological tissue.) determination of Al in, fluorimetric, 2868.

of Ca in, by automatic titration, 1472. of Fe in, spectrophotometric, 2868.

of Mg in, by automatic titration, 1472 of phosphate in, spectrophotometric, 3392.

of S in, 1477, 3871.

of V in, spectrophotometric, 1475. Plants, analysis of, spectrographic, 3011.

conditions for dry-ashing of, 633. determination of As in, spectrophotometric, 1970. of B in, 3010.

photometric, 5047.

of Ca in, u.v. spectrophotometric, 636.

of Cu in, polarographic, 5352. spectrographic, 5044.

of elements in, 4520.

of inorganic ions in, paper chromatographic, 5045.

of Fe in, by atomic absorption spectrometry, 3252.

Plants, determination-continued of Mg in, 287. spectrographic, 5044. of Mn in, by atomic absorption spectrometry, 3252 spectrographic, 5044. of Phosdrin in, photometric, 290. of Pu in, radiometric, 289. of Sr in, spectrographic, 42, 4398. of *0Sr in, 637. of U in, radiometric, 289. extraction of pigments from, 1126. Plasma. (See Blood plasma.) Plasmalogen, determination, 4932. potentiometric, 4933. Plasmals, separation, paper chromatographic, 4931. Plasmocorinth B, use of, as indicator in complexometric titrations, 2042. Plaster of Paris, determination of calcium sulphate in, by ion exchange, 2635. Plasticisers, determination of Cl in, 4383. Plastics, analysis of, B.S.I. methods for, 1461, 3850. chromatographic, 3851. characterisation of the benzene nucleus in, 2031. determination of water in, 4657. of whiteness of, reflectometer for, 4087. identification, by ion exchange, 4385. i.r. spectrophotometry of, 2031. polyurethane-, determination of Cl in, spectrophotometric, 3382. temp. effect on, B.S.I. method for testing of, 2851. tests for, B.S.I. amendment for, 4382. use of gas chromatography in analysis of, 2347. Platinum, detection, 156. determination, 4293.
by atomic absorption spectrometry, 353. in ammonium fluoride, 550. in catalysts, photometric, 548. X-ray spectrographic, 1384. in cathode slime from production of H₂O₃, 549. in hydrogen peroxide, 550. in ores and concentrates, 1032. in reforming catalysts, spectrophotometric, 3772. in silver, spectrographic, 1274. of Ag in, by neutron activation analysis, 2630. spectrographic, review, 1377. spectrophotometric, 161, 1383, 4791. X-ray spectrographic, 1033. isolation of, from concentrates, 4792. separation, from rhodium, spectrophotometric, use of 100Pt in neutron activation analysis, 1016. Plutonium, analysis of, 2214, 3119. of Pu - Ce - Co alloy, spectrophotometric, 121. determination, 4256. by square-wave polarography, 4766. by X-ray fluorescence, 5237. coulometric, 987. in natural water, radiometric, 289. in plants, radiometric, 289. in presence of U, by remote-control, 5519. in soil, radiometric, 289. in soln., remote control titrator for, 1226. in uranium plant soln., 4090. of β -activity in soln. of, 4090. of MA Am in, by α- and γ-ray spectroscopy, 5239. of gases in, 3732. of Np in, square-wave polarographic, 2213. of ²³⁵Pu, 500. of sulphate in, 2187. potentiometric, 986. radiometric, 118.

X-ray photometric, 119.

Plutonium,—continued i.r. spectrum of 230 Pu, 988. reactions of, with EDTA, 3733. separation, 120. from Am, Np and U, electrolytic, 5236. from Np, by ion exchange, 501. Plutonium alloys, determination of Al in Pu - Al. by ion exchange, 4689. of Th in, spectrophotometric, 2155. Plutonium nitrate, determination, spectrographic, 2215. Polarimeter, attachment to, for measuring optical rotary dispersion, 5112. spectro-, automatic recording of optical rotary dispersion by, 3575. Polarograph, controlled-potential derivative, application in high resistance media, 2016. direct-reading, electronic, 2577. single-sweep oscillographic, 5138. square-wave, 2017. Polarography, a.c., by harmonic measurements, 4606. of metal ions, effect of dissolved O on, 1654. apparatus for, 4602. applications of, in food analysis, review, 5424. in industry, 4104. in microchemistry, 3102. to kinetic studies, 3102. to organic analysis, review, 3280. to structural analysis of organic compounds, attempts to increase sensitivity of, review, 2019. bibliography of, in 1958, 1248. cathode-ray, review, 4604. cell for, 1632. device for correcting non-linear voltage at high currents, 3087. electrochemical device for, 4609. fundamental developments in, review, 5125. half-wave potentials of metal ions, 20. in anhydrous ethylenediamine, 4603. limits of application in analysis, 4107. method of "Tastpolarographie", 4608. oscillographic, advantages of, over classical, 4297. application to analysis, 3102. basic principles of, 4103. use of amalgated silver electrode in, 5516. pulse, determination of Pb in ores by, 2018. technique of, 4607. recent developments in, 5138. reference electrode for use in, 5514. scheme for automatic recording of curves and waves in, 5515. square-wave and a.c., review, 4605. theory and practice of, 4601. three-component cell for, 5123. use of amplifiers in, 3103. of a mercury cathode having a constant and renewable surface in, 5124. of polyethylene lauryl ether as max. suppressor in, 840. of stationary hanging mercury-drop electrode for determination of metal ions, 3102. variable-speed potential, apparatus for, 4598. with stationary mercury electrodes, 4599. Polonium, separation of 210Pb from, by ion exchange, 4678. Polyamides, determination of end-groups of, 625. i.r. spectra and molecular configuration of, 4889. Poly(butyl methacrylate), determination of butyl methacrylate in, 1098.

Poly(dimethylsiloxane), i.r. data for, 4836. Polyesters, analysis of, paper chromatographic, 1795. analytical control of formation of, 1836.

determination of the degree of unsaturation of, 4386

of fumaric acid in, 200.

Polyethylene, bottles, possible source of error through use of, in analysis, 1979. u.v. absorption spectrum of water stored in,

4654.

determination of methyl groups in, 2852, 2853. of phenolic antioxidant content of, B.S.I. method for, 3850.

Polyethylene lauryl ether, use of, as max. suppressor in polarography, 840.

Poly(ethylene terephthalate), determination of carboxyl groups in, potentiometric, 5328.

Polyisoprenes, analysis of, near i.r. spectrophotometric, 2863. Polymers, acrylic, determination of N content in,

4388. and methacrylic, identification, gas chromato-

graphic, 2859. characterisation of, by light scattering methods,

review, 5324. destruction of, with periodic acid, 5139.

determination of Cl in, 4383, 4384.

elastomeric, determination of acrylic acid, vinyl cyanide and vinylpyridine in, 2340.

identification, 4389. i.r. spectra of, 5327.

separation, paper chromatographic, 2337.

siloxane, determination of ratio of methyl to phenyl groups, i.r. spectrophotometric, 626. urethane, polyether-based, differentiation of, from

polyesters, 624. Polymyxin, determination of activity of, 3475. photometric, 2936.

Polynucleotides, determination of chain length of, 4968

Polyols, differentiation, from sugars, paper chromatographic, 2768.

Polyethylene glycols. (See Polyoxyethylene glycols.) Polyoxyethylene glycols, analysis of pyrolysis products of, 618.

determination, 1578.

differentiation of, from polyoxypropylene glycol, 4378.

esters of, determination, in bread, chromatographic, 2973. in cake, chromatographic, 2973.

identification, 2338.

Polyoxyethylene stearate, characterisation of polyglycols of, 619.

Polyoxypropylene glycols, differentiation of, from polyoxyethylene glycols, 4378.

Polypeptide, determination of amino acids in, 2031.

Polyphenyls, determination, 2304. separation, chromatographic, 4842.

Polyphosphates, analysis of, by nuclear magnetic resonance, 2689.

detection, in mayonnaise, 740.

determination, 4217.

paper chromatographic, 87.

Polypropylene, analysis of, improved method for, mass spectrometric, 2029.

Polysaccharides, analysis of, in liver biopsy specimens, 1849.

determination of aldehyde content and degree of polymerisation of, 1788.

Polystyrene, analysis of, spectrophotometric, 4888. separation, paper chromatographic, 2337. Polysulphides, determination, 3214.

Polythionates, determination, paper chromatographic, 473.

Poly(vinyl acetate), determination, 1834. separation, from poly(vinyl chloride), paper chromatographic, 1460. paper chromatographic, 2337.

Poly(vinyl butyral), separation, paper chromatographic, 2337

Poly(vinyl chloride), analysis of, i.r. spectrophotometric, 3381.

i.r. spectrum of, 2855.

separation, from poly(vinyl acetate) paper chromatographic, 1460.

paper chromatographic, 2337. Poppy capsules, determination of morphine in, 2422. Porphyrin, determination, in bitumen, 2826.

in petroleum, spectrophotometric, 3839. in petroleum residues, 2826.

eparation, from petroleum, chromatographic, 1090

Portland cement, determination of Al,O, in, 1042. of gypsum in, by ion exchange, 1043. of ignition loss in, 1041. of K in, 3777.

Potassium, detection, 367. in presence of NH4+, 878.

determination, 2067. conductimetric, 369, 3624 flame photometric, 366, 2620. flame spectrophotometric, 5162. in beryllium, spectrographic, 2588.

in biological materials, flame photometric, influence of anions on, 203.

in faeces, 639.

in fertilisers, flame photometric, 4031. radiometric, 3018.

in fireclay, spectrographic, 1262.

in food, 639.

in glass, 877. paper chromatographic, 368.

in hydrogen peroxide, spectrographic, 356.

in magnesite, spectrographic, 1262. in meteorites, mass spectrometric, 2623.

in mica, 4662.

in natural water, flame photometric, 5474.

in plant sap, 1468.

in Portland cement, 3777.

in presence of Cs and Rb, in sea mud, 1264.

in sea water, 1263.

in serum, by atomic absorption spectroscopy, 5342

flame photometric, 1467. spectrophotometric, 5343 X-ray spectrographic, 4901.

in silica brick, spectrographic, 1262.

in silicates, 877.

in sodium iodide, spectrographic, 996.

in soil, flame photometric, 785. in soln., radiochemical, 879.

in tomatoes and tomato juice, flame photometric, 3506.

in tungsten, flame photometric, 110.

in tungsten oxides, flame photometric, 110. in urine, flame photometric, 1467.

in wine, flame photometric, 1930, 4003.
of the rates of diffusion of, in man, by ion

exchange, 2866.

photometric, 3132. polarographic, 26.

potentiometric, 874, 876, 4122. radiometric, 2621.

spectrophotometric, 26, 3627. turbidimetric, 875.

with Na tetraphenylboron, review, 851.

Potassium-continued

separation and determination, reagents for, 1662. chromatographic, influence of organic solvents on, 2065

from Ca, Mg and Na, in biological materials, paper chromatographic, 3626.

Potassium bromate, determination of impurities in,

methods for the inspection of, 2588.

Potassium bromide, determination of impurities in,

methods for the inspection of, 2588. Potassium chlorate, determination, 4800.

Potassium dichromate, determination, 4800. Potassium ferricyanide, use of, in volumetric analysis, 3607.

Potassium ferrocyanide, determination, with ICl, 855. use of, as volumetric radiochemical reagent, 9.

Potassium guaiacolsulphonate, determination, in pharmaceutical preparations, 1554.

Potassium hydrogen phthalate, titration, coulo-

metric, 3585. Potassium iodide. reactivity of oxidising agents

with, 3282 Potassium persulphate, determination, in synthetic

rubber, polarographic, 629. Potassium salts, determination, potentiometric,

Potassium trithiocarbonate, use of, as substitute for

H₂S, in qual. analysis, 2593. Potatoes, determination of As in, 5012.

of sugars in, 3984.

by ion exchange, 2373.

Poultry excreta, determination of uric acid in, spectrophotometric, 4032.

Praseodymium, determination, in ceric oxide, radio-chemical, 4106. in lanthanum oxide, radiochemical, 4106.

of rare-earth metals in, spectrographic, 2117. partition coeff. in tributyl phosphate-HNO3, photometric measurement of, 3677. reduction of, 4179.

Precipitates, washing apparatus for, 1985. Prednisolone, determination, 2031.

paper chromatographic, 5389.

i.r. spectrum of, 243 Prednisone, determination, 2031. paper chromatographic, 5389.

photometric, 2440. i.r. spectrum of, 243.

Pregnanediol (5β-pregnane-3α: 20α-diol), determination, in urine, spectrophotometric, 3450, 3451. 20-oxo-, determination, in urine, spectrophotometric, 3451.

Pregnanetriol (5β-pregnane-3α: 17:20α-triol), deriv. of, determination, in urine, spectrophotometric, 1879, 3451.

separation, 3452.

Preservatives, detection, in beverages, 744. in margarine, microbiological, 273.

Procaine, detection, 3462.

oscillopolarographic, 1163.

determination, as tetraphenylborate, 720. separation and determination, spectrophotometric, 2939. from p-aminobenzoic acid, electrophoretic, and

determination, 721.

Procaine hydrochloride, determination, 1899.

Procyclidine hydrochloride, determination, spectrophotometric, influence of slit width on, 700. Progesterone, determination, in plasma, paper

chromatographic, 238. labelled with tritium, autoradiography of, 1258. oscillographic polarography of, 2903.

Proguanide. (See Proguanil.) Prognanil, detection, 3462.

determination, spectrophotometric, 2946.

Proline, determination, gas chromatographic, 4426. spectrophotometric, 672.

Promethazine, determination, 1551, 3486.

Propadiene, determination, in cracked gases, gas chromatographic, 4860. in propene, 2756.

Propane, determination, by reverse isotope dilution. 4818

Propanediol, alkoxy deriv. of, separation, from fishliver oils, 3306.

Propanol, gas chromatography of, 3557.

Propellents, determination of cellulose acetate in, 1103.

of diethyl, dibutyl and dioctyl phthalates in, spectrophotometric, 3385.

Propene, determination of propadiene in, 2756.

Properdin, determination, in serum, 4963.
Propionaldehyde, determination, gas chromatographic, 577.

Proportional counter, applications and uses of, for gases and vapours, 1228.

isoPropoxy groups, determination, 1054.
isoPropyl alcohol, determination, in presence of other alcohols, 2270.

in urine, i.r. spectrophotometric, 1482. of H₂O in, i.r. spectrophotometric, 563.

Propyl gallate, determination, 5025. in fats, 4014.

spectrophotometric, 5449.

in lard, spectrophotometric, 3510. separation, paper chromatographic, 1579. isoPropyl methylphosphonofluoridate (sarin), deter-

mination of fluorine in, 3289. isoPropyl phenylcarbamate, determination, spectro-

photometric, 2501. isoPropylbenzene hydroperoxide, determination,

2792 3-Propylpentane-2: 4-dione, use of, in determination of Be, 4136.

4-isoPropylphenazone, determination, 1549.

Propylene, determination, spectrophotometric, 2754. Propyne, determination, in cracked gases, gas chromatographic, 4860.

Protactinium, separation, from Th and U, 5235. Protein hydrolysates, determination, of amino acids in, 5368.

of cysteic acid in, paper electrophoretic, 1140. of lysine in, microbiological, 5369.

separation of amino acids in, paper chromatographic, 1859, 3489.

Proteins. (See also individual compounds.) analysis of, electrophoretic, 2898

Bence-Jones, detection, in urine, 1869. colour reactions of, 1501.

detection, in air, apparatus for, 1585. in urine, 4924.

determination, 4928, 5383. after agar electrophoresis, 1511.

in c.s.f., 3919.

photometric, 3440. spectrophotometric, 4961.

in serum, spectrophotometric, 2396. of Ca in, flame photometric, 3390.

of C in, 3916.

of C-end groups in, 2031.

of Cu in, 5384.

of mercapto groups in, 1870. spectrophotometric, 1509.

of methionine in, spectrophotometric, 4429. photometric, 1868. spectrophotometric, 229, 4955.

Proteins-continued

electrophoresis of, 5379. use of u.v. photometry in, 2397.

microbiological assay of, 3102.

milk-, analysis of, electrophoretic, 267. salt separation, in blood, 675.

in serum, 676.

in wheat, paper chromatographic, 2450. separation, electrophoretic, 4434, 4957.

influence of the supporting medium in, 2398. of egg-white, 4958.

serum-, analysis of, u.v. spectrophotometric, 4433. determination of albumin - globulin ratio of, electrophoretic, 4960.

spectrophotometric, 3439.

dye-binding of, 677.

electrophoresis of, 3437, 3441, 3914, 3915, 5378, 5381.

comparison of methods for, 2897.

defects in, 3438.

effects of ionic strength on relative mobility

separation and determination, u.v. spectrophotometric, 1510.

use of nigrosine as dye for, 678. whey-, determination of N in, 268.

separation, electrophoretic, effect of mastitis on, 269

Pseudocholinesterase, determination, 2419.

Pseudococaine, detection, oscillopolarographic, 1163. Pseudovitamin B12. (See Adenylcobamide.)

Psicofuranine, chemical and physical properties of,

determination, in plasma and serum, spectro-photometric, 3406. spectrophotometric, 2937.

Pteroylglutamic acid. (See Folic acid.)

Purines, determination, in cod muscle, spectrophotometric, 4435.

separation, chromatographic, 4969. paper chromatographic, 222.

Pyrazinamide, determination, in urine, spectrophotometric, 644.

Pyrazinamidosalicylic acid, determination, in urine, spectrophotometric, 644.

Pyrazinedicarboxylic acid, i.r. spectrum of, 191. Pyrazinic acid, i.r. spectrum of, 191.

1-Pyrazinoyl-2-isonicotinoylhydrazine, determination, in urine, spectrophotometric, 644.

Pyrazole derivatives, determination, in mixtures with salicyl deriv., spectrophotometric, 2031. Pyrene, detection, 2301.

Pyrethrum, detection and determination of active constituents of, spectrophotometric, 5054.

Pyridine, analysis of mixtures of, with nicotine, chromatographic, 5309.

determination, 3351. by galvanic micropiles, 2610.

of a-picoline in, 1086. spectrophotometric, 3352.

Pyridine bases, determination of water in, 2816. Pyridine derivatives, determination, 4366. nuclear magnetic resonance spectra of, 4367.

separation, chromatographic, 4365. Pyridine nucleotides, diphospho-, u.v. spectra of,

Pyridoxal, separation, from pyridoxol and pyrid-

oxamine, chromatographic, 1946. Pyridoxamine, separation, from pyridoxal and pyridoxol, chromatographic, 1946.

4-Pyridoxic acid, determination, in urine, fluorimetric, 4409.

Pyridoxine, assay of, modification of the Atkin method for, 4503.

determination of constituents of, 1946. spectrophotometric, 759.

separation, paper chromatographic, 3003, 4502. Pyridoxol, separation, from pyridoxal and pyridoxamine, chromatographic, 1946.

1-(2-Pyridylazo)-2-naphthol, and copper chelate of, investigation of, spectrophotometric, 2. use of, in analysis of metals, 3114, 3270.

Pyrimidines, determination, in cod muscle, spectrophotometric, 4435.

separation, paper chromatographic, 222, 4969. Pyrites, analysis of, X-ray diffractometric, 3775. determination of As in, radiochemical, 2031.

of Cd, Cu and Pb in, 1656.

of Cu in, 2626.

of sulphate in, flame photometric, 2704.

of S and sulphate in, spectrophotometric, 1719. Pyroceram, crucibles of, use of, in ashing, 4073. Pyrogallol, separation, by ion exchange, 2307. use of flavylium perchlorate as reagent for, in

paper chromatography of, 3112.

Pyrolusite, analysis of, 4777. Pyromellitein, indicators, for use in acid-base titrations, 4096.

Pyrophosphate, determination, in mixture with Na triphosphate, spectrophotometric, 1330. in presence of orthophosphate, chromato-

graphic, 88. Pyrrolines, reaction of, with nitrous acid, 4368. Pyruvaldehyde, determination, polarographic, 5279. separation, from acetol and lactaldehyde, chromatographic, 2279.

Pyruvic acid, determination, in blood, spectrophotometric, 1491.

in c.s.f., spectrophotometric, 1491, 1850. in urine, spectrophotometric, 1491.

Qualitative analysis, by formation of coloured products on agar gel, 343.

inorganic, separation and identification of halides and thiocyanate in, 123. study of oxidation of H2S to SO4 by NO3-, 98.

method of teaching, 3102. of anions, 1239, 1641, 5127.

progress in 1958, 2033.

separation of anions and cations, 2597.

of elements, paper chromatographic, 3115. of the zinc-group sulphides, 3602.

technique for use on microscale, 1638. ultra-micro-, apparatus and techniques for, review,

use of benzidine deriv. in, 2037.

of the Bio-electronimeter in, 2039. of ion exchange materials in, 4628.

of pyrolytic and pyrohydrolytic cleavages in, 3102.

of toluene-3: 4-dithiol in, 2038.

Quartz, determination, in coal, i.r. spectrophotometric, 1038.

(See also

in ores, i.r. spectrophotometric, 1038.

in presence of silicates, 426.

in rocks, 1037. in sulphide ores, 66.

Quaternary ammonium compounds.

Detergents; Surface-active agents.) detection, chromatographic, 4487.

determination, 2954. by ion exchange, 3845. photometric, 2292. spectrophotometric, 2780. Quercetin, determination, radiochemical, 2031. spectrophotometric, 1124.

Quercetin-6-sulphonic acid, use of, in determination of U, spectrophotometric, 4246.

Quinalbarbitone, identification, in blood, u.v. spectrophotometric, 252.

Quinaldine, detection, spectrophotometric, 2797.

Quinaldinohydroxamic acid, study of complexes of, with Fe and V, 1238.

Quinicine, determination, spectrophotometric, 5405. Quinidine, determination, spectrophotometric, 3463. Quinine, determination, 3972.

in soft drinks, fluorimetric, 1926.

spectrophotometric, 2031, 3463, 5404. separation, from other drugs, by ion exchange, 3965

Quinine oxidase, determination of activity of, in serum, 4988

Quinol, determination, coulometric, 511.

in sewage, 4029.

spectrophotometric, 4847.

separation, by ion exchange, 2307. titration of, with brucine as indicator, 3603.

Quinoline, determination, u.v. spectrophotometric,

Quinoline yellow. (See Dyes, C.I. Acid Yellow 3.) Quinoline-2-aldoxime, use of, in determination of Pd, spectrophotometric, 4292.

Quinolinic acid, use of, in determination of Fe, spectrophotometric, 2725.

Quinones, detection of terminal-ring-, spectrophotometric, 2797.

determination, 189.

proton-resonance spectrum of, 1082.

Quinoxaline-2: 3-dithiol, use of, in determination of Pd, 3273.

Quinuronium sulphate, determination, spectrophotometric, 4463.

Racephedrine, identification, 2918.

Raceophenidol, determination, spectrophotometric, 3970

Radioactive isotopes, analysis of mixtures of, γ-ray spectrometric, 3125.

determination, in urine, 3400. of y-ray abundance, 3588.

identification of a-emitting, in plants, spectrometric, 1479.

measurement of, comparison of windowless counter with the window Geiger - Müller tube,

removal of, from bottles, handling device for, 2025.

use of, in microbiological research, 3102. in pharmaceutical analysis, 1885.

Radioactivity, determination, in bones, 4526.

in grass, 1479, 4526. in paper chromatography, simple apparatus for, 3100.

use of Geiger counter for, 3098. in soil, spectrometric, 4526.

Radiochemical analysis, γ-absorptiometer for, 4624. application of exchange reactions in, 2031.

of gas chromatography to compounds labelled with 14C, 5496.

to aq. solutions mixed with solid crystalline fluors, 847.

automatic chromatographic, machine for, 2521. determination of activated corrosion products by, 3103

errors in, 4105.

Radiochemical analysis-continued

estimation of β -counting efficiency in, 331. fundamental developments in, review, 5125.

glove boxes for use in, 3096. interaction of β -particles in, 2031. micro-separator for use in, 1227.

of aq. soln., 2585.

of finely divided solids, 4620.

of industrial wastes, 3103.

of materials used in reactors, 3103. preparation of suspended solids samples for,

review and bibliography of, 858.

separation in, by amalgam exchange, 4623.

technique for, 845.

transference of radioactive material from a paper chromatogram to a planchette, 2531. use of, for monitoring of radioactive effluents

from a chromatographic column, 2524. in kinetics, 2031.

with neutrons from a Ra - Be source, review, 3590

with 14-MeV neutrons, 1229.

Radium, determination, in barium sulphate, 2638. in natural water, 5476. in pitchblende, 2638.

in radioactive ores, 2031.

separation, from Ba, by ion exchange, 44. from thorium nitrate, by ion exchange, 2156. of \$10Pb from, by ion exchange, 4678. of 228 Ra, from other radio-isotopes, 3620.

Raffinose, determination, 5428. in molasses, paper chromatographic, 3495, 3496.

paper chromatographic, 3494. Rape oil, determination of iodine value of, 5030.

Rare earths, actinide, separation, by ion exchange, review, 64.

lanthanide, separation, from mixtures of their chlorides, 63.

Rare-earth metals, actinide, determination of electro-deposition of, on platinum discs, by scintillation counting, 4695.

analysis of, spectrographic, 2107, 2653, 5180. chelating agents for the extraction of, 2031.

chromatography of, 4056.

determination, 1326, 1691, 3675. chromatographic, 2654.

flame spectrophotometric, 3176, 5182.

in mixtures, paper chromatographic, 59. in monazite, spectrographic, 4694. in presence of Th, spectrophotometric, 2105.

in uranium, 335. by ion exchange, 3233.

spectrographic, 493. in zirconium and its alloys, spectrographic, 3194.

of radioactive, in water, 3103.

of Sm in, spectrographic, 2106. spectrographic, 2031.

spectrophotometric, 3175. identification of, by differential thermal analysis, 3174.

isolation of, 4180. oxalates of, effect of SO43- on crystal formation of,

separation, 4182.

by ion exchange, 2110, 2652, 4181. from Th, 3177.

of Th from, by ion exchange, 943.

Rauwolfia, determination of reserpine in, electrophoretic, 3467.

Rauwolfia alkaloids, determination, spectrofluorimetric, 1891.

Rayon, determination of β- and γ-cellulose in, comparison of methods for, 198 viscose-, analysis of mixtures with cotton, 1831.

Reagents, organic, use of, in analysis, 3102. "Red mud", determination of Zr in, 4719.

Reducing agents, determination, 3798.

Reductase, determination of activity of, spectrophotometric, 4990.

hydroxyguanidine-, determination, 1531.

Reduction, use of, in analytical chemistry, review, Reflectometer, use of, in determination of whiteness

of commercial materials, 4087.

Refractive index, high-frequency measurement of, 1045

optical system for, 3577.

use of, in continuous analysis, 5113.

Refractories, analysis of, 1388.

of magnesia clinker for use in, 2742.

spectrographic, 1387. containing Fe, B.S.I. specification amendment for, 1356.

determination of Fe in, spectrophotometric, 2730. Rennet, detection in milk products, 3986. Resacetophenone. (See Dihydroxyacetophenone.)
Resazurin, determination, 1828.

Rescinnamine, determination, 3948. Reserpine, determination, 3945.

in feeding stuffs, 1968.

in Rauwolfia, electrophoretic, 3467. in urine, 4911.

spectrofluorimetric, 703, 1891. spectrophotometric, 2424, 4453.

Resins, of hops, gas chromatography of, 3995. Resins, synthetic, alkyd, determination, 3383.

of adipic acid in, 2858. of p-tert.-butylbenzoic acid in, spectrophotometric, 1463.

of isophthalic acid in, 3852.

determination, of hydroxymethyl groups in, 5326. of non-volatile content of, 1838.

of Si in, 4891. epoxy-, determination of epoxy groups in, i.r.

spectrophotometric, 4391. phenol - formaldehyde, separation, paper chromatographic, 5325.

phenolic, determination of resin content of, 199. polyamide, determination of viscosity of, B.S.I. method for, 3850.

polyester, analysis of, i.r. spectrophotometric, 2343.

determination, of dicarboxylic acids in, paper chromatographic, 1459.

of ratio of trans to cis isomers in, i.r. spectro-photometric, 2854.

of styrene in, polarographic, 4887. with BrCl, 3807.

identification, by differential thermal analysis, 2342.

polyurethane, determination of Cl in, spectrophotometric, 3382.

separation, paper chromatographic, 2337. silicone, determination of Al in, 5329.

of water in, 2346.

urea - formaldehyde, determination of degree of condensation in, 2857.

of urea in, 2856. urethane, analysis of, 1458.

Resoles, determination of resin content of, 199. Resorcinol, determination, in sewage, 4029.

spectrophotometric, 4847. separation, by ion exchange, 2307.

Resorcinolphenylsuccinein, use of, in argentimetric titrations, 5130.

Resorufin, determination, 1828. Resyl. (See 3-(2-diol.) Rhamnus frangula. (See Frangula bark.)
Rhaponticin, determination, in rhubarb rhizome,

photometric, 249.

Rhenium, detection, 516, 517.

determination, 3246, 3248, 4265. in industrial wastes, 1348.

in minerals, 2031.

in molybdenite, 998, 1348, 3245. in molybdenum concentrates, 520.

in presence of Mo, spectrophotometric, 519. spectrophotometric, 3247, 4778.

u.v. spectrophotometric, 517. polarographic behaviour of, 2222.

separation, from Mn, Mo, Ru and Tc, 4776. with zinc acetate, 4629.

study of reaction of, with methyl violet, 518. sulphides of, thermolysis of, 3717.

Rhenium alloys, analysis of, 3248.

Rhodamine B. (See Dyes, C.I. Basic Violet 10.) Rhodium, determination, 2739.

by atomic-absorption spectrometry, 353. in uranium alloys, spectrophotometric, 1381. polarographic, 1380. simultaneously with Pd. spectrophotometric.

1379. spectrographic, review, 1377.

spectrophotometric, 1379, 4791, 4794.

isolation of, from concentrates, 4792. separation, by ion exchange, 4290.

from Ir, by ion exchange, 4795. from Pt, spectrophotometric, 4289.

use of 104mRh in neutron activation analysis, 1016.

Rhubarb, rhizome, determination of anthraquinones in, 2430.

of rhaponticin in, photometric, 249. Riboflavine, determination, in biological tissue, by ion exchange, 5397.

in food, 5459.

extraction of adsorbed, 4501. separation, paper chromatographic, 3003. use of, as fluorescent indicator, 6.

Ribonuclease, determination of activity of, spectrophotometric, 241.

of bovine pancreatic, spectrophotometric, 4445.

p-Ribulose, determination, spectrophotometric, 2880.

Rice, determination of moisture in, 3979.

Ricinelaidic acid, determination, i.r. spectrophotometric, 1577

Rilsan. (See Nylon.)

Rocks. (See also Silicate rocks.) determination of Al in, 2095. of B in, photometric, 1298.

of Cs in, spectrographic, 1265. of calcite in, 1034.

of carbonates in, 3016.

of Co in, radiochemical, 2031. of Cu in, radiochemical, 2031.

of dolomite in, 1034. of In in, radiochemical, 2031.

of magnesite in, 1034.

of Mg in, photometric, 2077. of Ni in, radiochemical, 2031.

of opal in, 1037.

of quartz in, 1037. of Ru in, spectrographic, 1265.

of S in, 2701.

of Ti in, 1318.

of U in, polarographic, 3227. neutron activation analysis of, 1385.

Bocks-continued

phosphate-, determination of F in, spectrophotometric, 4768.

Rogor, determination, in olives, spectrographic, 5480.

of dimethoate in, spectrophotometric, 5058. Rosin, determination, 3383.

Rosin acids, analysis of, mass spectrometric, 2849.
differentiation from fatty and naphthenic acids, 277.

separation, gas chromatographic, 2850.

Rotation-dispersion, measurement of, spectrophotometric, 5111.

Rotenone, determination, in lonchocarpus, 1969, 3470

determination, spectrophotometric, 1158. Rubber, analysis of, 2351.

i.r. spectrophotometric, 2862. near i.r. spectrophotometric, 2863.

butyl, determination of viscosity of, B.S.I. method for, 3850.

determination, B.S.I. specification for polymer,

of accelerators in, 5333.

and age-resisters in, polarographic, 630, 1839, 2349.

of O absorption of, apparatus for, 2517.

of tetramethylthiuram disulphide in, polarographic, 2349. of Zn diethyldithiocarbamate in, polarographic,

2349.

distinction between natural and neoprene, by neutron irradiation, 2031.

i.r. analysis of, standardisation of, 2352. polyurethane, analysis of, i.r. spectrophotometric,

1464. synthetic, determination of potassium persulphate in, polarographic, 629.

testing of, amendment to B.S.I. methods for, 3853.

wet oxidation of, 1396.

Rubidium, detection, 367. determination, conductimetric, 369. in minerals, spectrographic, 1265. in presence of K and Cs, 1264. in rocks, spectrographic, 1265. in silicates, spectrographic, 2622. in sodium iodide, spectrographic, 996. potentiometric, 4122. radiometric, 2621.

factors affecting flame emission of, 4123. separation and determination, reagents for, 1662. from Cs, by ion exchange, 5147.

from K, 1266.

Ruthenium, detection, 156. determination, 4797.

in uranium alloys, spectrophotometric, 335. of radionuclides, in fission products, polarographic, 4264.

radiochemical, 2588.

spectrographic, review, 1377.

spectrophotometric, 1378, 1383, 4793. separation, from Mn, Mo, Re and Tc, 4776. from Pd, spectrophotometric, 4289.

Rutile, analysis of, use of dielectric constant in, 859. determination of Cu and Sb in, polarographic,

Rutin, determination, radiochemical, 2031. use of, in detection of V, 94.

SNADNS, use of, in analysis, 1. -5, -6, and 8-, use of, as reagents for Th, spectrophotometric, 4725.

Saccharides, chromatography of, 3410. Saccharimeter, use of, in the sugar industry, 3578. Saccharin, determination, 3508, 3974. separation, chromatographic, 3973. Safranine T. (See Dyes, C.I. Basic Red 2.)

Safrole, determination, in non-alcoholic beverages, spectrophotometric, 2977.

spectrophotometric, 1435.

Sage oil, analysis of, gas chromatographic, 3847. Salad cream. (See also Mayonnaise.) determination of egg in, spectrophotometric, 262.

Salicyl derivatives, determination, in mixtures with pyrazoles, spectrophotometric, 2031.

Salicylaldehyde, deriv. of, use of, in analysis, 585. semicarbazone, use of, in determination of Zn,

spectrophotometric, 902.

Salicylamidoxime, use of, in determination of Cu, amperometric, 3629.

Salicylate, determination, in serum, u.v. spectrophotometric, 208.

Salicylic acid, detection and identification, paper chromatographic, 1569.

determination, 1793.

in biological tissues, spectrofluorimetric, 3401. in presence of benzoic acid, chromatographic,

influence of Mg ions on u.v. absorption of, 4849. in mixtures with cinchophen, separation and determination, electrophoretic, 1165. isotopic analysis of, 5306.

Salt, rock-, determination of Al in, 5142.

of Fe in, 5142. of Mg in, 5142. of Ti in, 5142.

sea-, analysis of, 4295.

Samarium, analysis of, spectrographic, 2117, 4183. determination, in cerium-group metals, spectrographic, 2106. separation, from Gd, electrolytic, 918.

Samarium oxide, determination of Ce and Nd in, radiochemical, 4106.

Sand, determination of moisture in, 870. of oxidised Fe in, 3250.

Santalol, determination, 4877.

Santonin. separation, paper chromatographic, 2031.

Sapogenins, i.r. spectra of, 1876.

Saponification value, determination, of olive or soya bean oil, potentiometric, 750.

Sarcomycin, polarography of, 3957.

Sarcosine, determination, in urine, 2391.
Sarin. (See iso Propyl methylphosphonofluoridate.) Sarothamnus scoparius. (See Broom.)

Sausage, determination of nitrates in, polarographic, 5015.

Scandium, detection, 417, 3168 determination, 3169, 3170, 3171, 4174.

flame spectrophotometric, 5182. in granite, spectrographic, 5181.

in meteorites, by neutron activation analysis, 3776.

photometric, 916. spectrophotometric, 418, 4175.

separation, from Ca, electrolytic, 1693.

from Y, Ac and the lanthanides, paper chromatographic, 4176.

Schöniger flask, simple design of, 5068.

Schradan, analysis of, 5059.

Scintillation counter, for use in analysis, 2031. liquid, 4621.

application to determination of 14C and 3H in milk, 5521. use of, for calibration of neutron source strength,

844.

Scopolamine. (See Hyoscine.) Selachyl alcohol, separation, from fish-liver oils, 3306. Selenate, detection, 4237. Selenite, determination, 2709. in presence of selenate, 2709. Selenium, determination, 963, 2191, 3217, 3719. amperometric, 2707. in biological materials, 3396. spectrophotometric, 3395, 4403. in blood, 3396. in chromium - nickel steel, 3759. in lead dust, 5224. in meteorites, by neutron activation, 4753. in milk, 3396. in organic compounds, 4317. in pyritic ores, 106. in sulphide ores, spectrophotometric, 3720. in telluric acid, 4239. in tellurium, spectrographic, 2057. spectrophotometric, 4238. of As in, spectrographic, 2057 of Br in, spectrophotometric, 474. of impurities in, 2708. of Fe in, spectrographic, 2057. of Te in, spectrographic, 2057. spectrophotometric, 1339, 4236, 5223. separation, 1723. from Te, 475, 2706. Selenocyanate, determination, 2709. Semen, determination of fructose in, spectrophotometric, 4411. of lactic acid in, spectrophotometric, 4411. Semicarbazide, determination, potentiometric, 2293. Semi-conductors, determination of trace elements in, radiochemical and mass spectrometric, 3102. Semolina, determination of carotene in, review, Senna, determination of active principles of, 2932. of anthraquinones in, 2430. Sennosides, determination, spectrophotometric, 2932. Sephadex, use of, in filtration, sorption properties Serine, determination, in lipid hydrolysates, spectrophotometric, 4952. polarographic, 1504. phosphate esters of, determination, in brain and spinal cord, by ion exchange, 3897. Serotonin. (See 5-Hydroxytryptamine.) Serum. (See Blood serum.) Setoclavine, detection, by u.v. fluorescence, 3468. Setoglaucine. (See Dyes, C.I. Basic Blue 1.) Sevin. (See 1-Naphthyl methylcarbamate.) Sawage, determination of alkylbenzenesulphonates in, spectrophotometric, 1957. of amino acids in, 3009. of dihydric phenols in, 4029. of nitrite in, spectrophotometric, 1958. of oil in, 4519. of the permanganate value of, 3532.

of quinol in, 4029.

identification, 2411.

determination, 655.

detection, 4927.

of resorcinol in, 4029.

Sex hormones. (See also individual compounds.)

in c.s.f., spectrophotometric, 215, 1873, 4926.

in orosomucoid, electrophoretic, 2899.

Shellfish, poison from, determination, 1563.

Sialic acids. (See also Neuraminic acids.)

spectrophotometric, 1872. Silage, determination of sugars in, 4528. Silanes, organic, determination, of Cl in, 2256. on glass containers, 2860. i.r. spectra of, 4346. separation, gas chromatographic, 4347. Silica, determination, 2117, 2661, 4704, 4705. in air, spectrographic, 3528. in ammonium fluoride, 1259. in basic slag, 2744. in chromium ores, 2118. in de-ionised water, by ion exchange, 2662. in hydrogen peroxide, 1259. in magnesite, 1279. in Mg trisilicate, 1279. in minerals, spectrophotometric, 2247. in natural water, spectrophotometric, 1695. in presence of F and P, spectrophotometric, 423. in silicates and fluorosilicates, spectrophotometric, 922. in slag, 39. in soil, spectrophotometric, 1695. in steel, 1014. in television screens, spectrographic, 2636. of sodium in, 4120. spectrophotometric, 422. free, determination, in presence of silicates, 424. photometric, 425. Silica brick, analysis of, 1389. determination of K and Na in, spectrographic, Silica gel, B.S.I. specification for, 3182. influence of different specimens of, in gas chromatography, 3558. Silicate, determination, in presence of arsenate and phosphate, spectrophotometric, 455. of Fe in, spectrophotometric, 2730. separation of B from, 4153. Silicate rocks. (See also Rocks.) determination of Cl in, 3241. of metals in, spectrographic, 67. of Th in, by ion exchange, 4212. spectrophotometric, 3195. of trace elements in, spectrographic, 4798. precipitation of Mn in, analysis of, 2719. Silicates, analysis of, 163, 3365 spectrographic, 2622, 2663, 3682. determination of Cs, In, Rb and Tl in, spectrographic, 2622. of Co in, 1374. of F in, apparatus for, 1192. of Fe in, spectrophotometric, 133. of metals in, spectrographic, 67. of SiO₂ in, spectrophotometric, 922. of TiO₂ in, spectrophotometric, 935. study of surface acidity of, 4706. Silicides, analysis of, 1388. Silicon, analysis of, by radioactivation, 4700. determination, in aluminium, 4188. B.S.I. specification for, 4160. in aluminium alloys, 4188. B.S.I. specification for, 4160. polarographic, 4703. in bauxite, X-ray spectrofluorimetric, 1386. in beryllium, absorptiometric, 2587. in beryllium compounds, 33. in blood and urine, photometric, 3870. in calcium, 38. in cast iron, 1363. in clay, X-ray spectrofluorimetric, 1386. in Cu alloys, B.S.I. method for, photometric, in natural water, spectrophotometric, 776. in organic compounds, 2257. in presence of P, 923. in sodium iodide, spectrographic, 996.

Silicon, determination-continued in steel, 1363, 3619, 3680, 3751. spectrophotometric, 2233. in synthetic resins, 4891. in titanium tetrachloride, spectrographic, 437. in uranium alloys, spectrographic, 3180. in uranium dioxide, 496. in urine, 4187. in vanadium, 1334. in zirconium, photometric, 2142. of Bi in, spectrographic, 924. of B in, photometric, 4701. of Cd in, spectrographic, 924. of impurities in, by neutron activation analysis, 1694. of I in, by neutron activation analysis, 4702. of Pb in, spectrographic, 924. of Zn in, spectrographic, 924. photometric, 2660. spectrophotometric, 2659, 3681. Silicon alloys, determination of Ca in Si - Al - Ca, 4140 Silicon carbide, neutron activation analysis of, 3181. Silicon, organic compounds of, identification, i.r. spectrphotometric, review, 1075. i.r. spectra of, 4346. Siloxene, use of, as indicator in titrations, 2040, Silver, analysis of, by neutron activation analysis, 382 detection, 2629. determination, 887, 1253, 1273, 1671, 3117, 3634, 3635, 3709, 3825 amperometric, 3122, 4133. by atomic absorption spectrometry, 353. by fire-assay, radiochemical evaluation of, 29. by isotope exchange, 381. coulometric, 3636. in air, spectrographic, 3528. in Cd sulphide, radiochemical, 2031. in copper, by atomic absorption spectroscopy, 5153. in copper ores, by ion exchange, 5154. in Cu - Ag alloys, amperometric, 4133. in galena and blende, radiochemical, 888. in industrial wastes, spectrophotometric, 5043. in lead, spectrographic, 2669. in photographic papers, 1457. in plants, by isotope dilution, 633. in platinum, by neutron activation analysis, 2630. in presence of Bi, Cu and Fe, 4668. of Hg, 5155. in rocks, by neutron activation analysis, 4669. in Th - U alloys, 335. in zinc sulphide, radiochemical, 2031. of Sb in, spectrographic, 1274. of Bi in, polarographic, 458. of Cu in, 4129. of Pb in, 4195. of other metals in, 1274. polarographic, 1670. photometric, 4132. radiochemical, 9. extraction of dithizonate, 1672. oxonol dyes as reagents for, 2031. separation, by extraction, 3140. by isotopic exchange, 2031. from Cu and Au, paper chromatographic, 380. from electrolytic slimes, 5258.

from Pb, 30.

spot test for, 4131.

Silver alloys, analysis of, by ion exchange, 3637.

of Ag - Al, X-ray spectrofluorimetric, 3669.

Silver alloys-continued determination, of Bi, Fe, Pb and Sb in, spectrographic, 1274. of Ag in Ag - Cu, amperometric, 4133. Silver dithizonate, extraction of, with CCl, and CHCl₃, 1672. stability of, in CCl4, 1645. Silver iodide, determination, 2073. Silver nitrate, determination of Cu in, 4129. Silver reductor, use of, in analysis, 3121. Sitostanol, y-, separation, paper chromatographic, 4438. Sitosterol, B- and y-, separation, paper chromatographic, 4438. Slag, analysis of, 1727, 2744, 3279, 3778. spectrographic, 2733. determination of Fe in, 2729. of Ca in, spectrophotometric, 1271. of Cu in, spectrophotometric, 1271. X-ray spectrographic, 4666. of Fe in, B.S.I. specification for, amendment to, 1356. of S and sulphate in, spectrophotometric, 1719. of water in, 4294. lead smelting, determination of CaO and SiO, in, phosphate furnace, determination of Al in, photometric, 410. Siemens-Martin, determination of basicity of, 1768. titanium, determination of Ca and Mg in, 1676. of V in, spectrophotometric, 1715 Soap, determination of total fat in, 3368. Sodium, determination, 24, 2064, 4119, 4196. conductimetric, 25, 3624. flame photometric, 366, 2620. flame spectrophotometric, 5162. in air, spectrographic, 768 in Babbitt metal, spectrographic, 2066. in beryllium, spectrographic, 2588. in biological materials, flame photometric, influence of anions on, 203. in calcium, flame photometric, 365. in calcium hydride, flame photometric, 365. in dietetic products, flame photometric, 5010. in faeces, 639. in fireclay, spectrographic, 1262. in food, 639. in hydrogen peroxide, spectrographic, 356 in magnesite, spectrographic, 1262 in natural water, flame photometric, 5474. in Portland cement, 3777. in serum, 1842, 4897 by atomic absorption spectroscopy, 5342. flame photometric, 1467. in silica, 4120. in silica brick, spectrographic, 1262. in soil, flame photometric, 785. in tellurium, spectrographic, 2057. in tungsten and its oxides, flame photometric, in uranium, flame photometric, 335. in urine, flame photometric, 1467. in wine, flame photometric, 1930, 4003. of Co in, spectrophotometric, 151, 2238. of O in, i.r. spectrophotometric, 4661. of Na₂O in, 1261. of rates of diffusion of, in man, by ion exchange, 2866 spectrographic, 2139. heat-transfer systems, oxide monitor for, 3103. purification of, from oxides, 4121. reagent for, in presence of K, 2031.

Sodium-continued

separation, chromatographic, influence of organic solvents on, 2065.

from Ca, K and Mg, in biological materials, paper chromatographic, 3626.

Sodium acetate, titration, coulometric, 3585.

Sodium benzoate, determination, 4355

Sodium carbonate, determination of Fe in, 3250. of NaOH in, 4114.

Sodium chloride, determination, in pickling liquor, 3738.

of Ca in, 1281.

of Mg in, 1281.

spectrophotometric, 394.

Sodium dichromate, analysis of, spectrographic, 4090

methods for the inspection of, 2588.

Sodium 1: 2-dihydroxybenzene-3: 5-disulphonate. (See Tiron.

Sodium 2:3-dimercaptopropanesulphonate. Unithiol.)

Sodium dithionite, analysis of, 2031.

Sodium ferrite, determination of Na, O and Na, CO, in. 526

Sodium hydrogen S-(2-aminoethyl)phosphorothioate, determination, spectrophotometric, 1866.

Sodium hydrogen cysteamine S-phosphate. Sodium hydrogen S-(2-aminoethyl)phosphoro-

Sodium hypobromite, use of, as volumetric reagent, 14

Sodium hydroxide, determination, in sodium carbon-

methods for the inspection of, 2588. standardisation of, in volumetric analysis, 4099.

techn., determination of Hg in, 5167. Sodium iodide, absolute calibration of crystals, for

scintillation spectrometry, 2031. determination of Ca, Si, Ba, K and Rb in, spectro-

graphic, 996. of Tl in, 2104.

Sodium lauryl sulphate, analysis of, 179. determination, 728, 2328.

of sulphate in, 1420

Sodium nitrite, determination of impurities in, 4090. methods for the inspection of, 2588

Sodium noramidopyrine methanesulphonate, determination, spectrophotometric, 5004.

Sodium oxide, determination, in sodium, 1261. Sodium phenylacetate, determination, 4355.

Sodium salicylate, determination, 4355.

separation, from mixtures of cortisone, deoxycortisone and amino acids, paper chromatographic, 716.

Sodium sulphite, determination, with ICl, 855. Sodium tetramethylenedithiocarbamate, use of, in analysis, 352.

Sodium tetraphenylboron, determination, 4853. use of, in analysis, review, 851.

Sodium triphosphate, determination, in mixture with pyrophosphate, spectrophotometric, 1330. Soil, determination of Ca in, flame photometric, 4523.

of carbonate in, 3014, 3015, 3016. thermogravimetric, 5046.

of CO, in, 1188.

of Cu in, 4400.

chromatographic, 286.

of ethylene dibromide in, 5049.

of inorganic ions in, paper chromatographic, 5045.

of Fe in, by atomic absorption spectrometry, 3252

spectrophotometric, 784.

Soil. determination-continued

of iron oxides in, 786.

of Mg in. 287.

elimination of interference by Mn in, 4522. of Mn in, by atomic absorption spectrometry, 3252

of moisture in, 4657.

radiochemical, 1960.

of NO₂ in, spectrophotometric, 288, 3017.

of organic carbon in, 3013, 4524.

of O in. 1188.

of phosphate in, by isotopic dilution, 1592.

of Pu in, radiometric, 289

of K in, flame photometric, 785

of α -radioactivity in, spectroscopic, 4526. of silica in, spectrophotometric, 1695.

of Na in, flame photometric, 785.

of **Sr and **Sr in, 637, 1677.

of SO₄- in, 3216. of TiO₂ in, 4525.

of trace elements in, spectrophotometric, 783.

of U in, radiometric, 289.

of Zn in, 4400.

chromatographic, 286. machine for crushing, 2512.

separation of aluminium from iron in, 4525.

stabilised ferruginous, determination of the lime content of, 5048.

statistical determination of trace-element concn. of large areas, 285.

Solder, determination of Cd in, 1682. of Sn in, 4709.

of Zn in, 1682.

Solochrome Cyanine R. (See Dyes, C.I. Mordant Blue 3.)

Solochrome Green V. (See Dyes, C.I. Mordant Green 15

Solochrome Violet R and RS. (See Dyes, C.I. Mordant Violet 5.)

Solvents, evaporation of, apparatus for, 4045. occluded, determination, in organic comp., gas chromatographic, 4801.

Sorbic acid, detection and identification, paper chromatographic, 1569.

determination, spectrophotometric, 1792. identification, 183.

Sorbitol, determination, in serum, 1485. in urine, 1485.

separation, paper chromatographic, 3308.

Soya bean, determination, in meal, 5014. Soya-bean meal, determination of water-disposable protein in, 5014. of urease activity of, 1528.

Soya-bean oil, determination of iodine value of, 5030. of saponification value of, potentiometric, 750, separation of glycerides of, paper chromato-graphic, 1936.

Sparteine, determination, 1886.

Specific gravity, determination, plummet for, 3023. Spectra, of rare-earth and transuranic elements in I to 3µ region, measurement of, apparatus for, 314.

Spectra, Raman, effect of absorbancy on intensities, 2565

photo-electric recording of, 5508

use of, in analysis of hydrocarbons, 2607. Spectrofluorimeter, improved, for use in biochemical analysis, 5507

automatic recording, 835. recording, 5104.

Spectrofluorimetry, correction factors for, methods of obtaining, 5105

effect of Raman spectra of solvents on, 1214. fundamental developments in, review, 5125. Spectrofluorimetry—continued

measurements with spectrophotometers and comparison standards in, 3069.

Spectrograph, direct-recording, 1755.

displacement of the calibration curve through defocusing of, 5500. grating, improvement in, 2000.

large-aperture, 3562.

vacuum, 3059.

with photoelectric recording, 5098.

Spectrography, emission, accuracy in, 2034. analysis of inorganic non-metallic materials by, 3124.

of soln, in a condensed spark, 5501.

analytical possibilities of working below 2000 A, 4578

apparatus for introduction of powders, 829. for the Lundegardh spraying method in, automatic, 2012.

for preliminary fractional distillation in, 5069.

application to analysis of soln., 3102.

to quant. analysis, 4579. of method of "single addition", 310.

automatic, for determination of N in argon, 4576.

recording systems for use in, 1211.

burner for, 1618.

calculation board for use in, 4580.

comparison of carbon and graphite electrodes for use in, 3061.

construction of variable-slit photometers for use in, 2547.

determination of the degree of absorption of lines in, 2552.

developments in, review, 3597.

electrical calculator for use in, 4581.

electronic trigger unit for capacitor discharge,

fundamental developments in, review, 5125. ignitor unit for d.c. arcs for use in, 4077. improved rotating disc electrode for use in,

5101. improvement in frequency spectrum analysers,

2003. influence of photographic emulsion on effective width in, 2548.

of third elements in analysis of soln. by, 3567.

internal standard method for, 1209. light detectors for vacuum, 3058 plasma jet as source for, 307, 3566.

porous-cup electrode for, 825

prepn. of samples for, 4075. relationship between the flow rate, flame temp. and intensity of lines, 3571, 3572.

intensity and change of pressure, 2550. sample heater for, 2553. sensitivity of, 2551, 4074.

source for, combining arc and spark discharges, 309.

light-weight, 308.

spectrum display comparator for, 2555. superiority of preformed electrodes in, 4076

system for simultaneous sampling and analysing metals by, 3563.

technique for analysis of solutions by, 826. use of adhesive tape for spreading sample, 306. amorphous carbon electrodes in, 3564.

effective widths in, 2549. gas-discharge apparatus as light source in, 2002.

in gas analysis, 3060. in spot analysis, 4575. Spectrography, emission, use of,-continued low-pressure mercury arc in, for investigation

of light scattering, 1620. low-voltage pulse discharge in, 2546. powder sifting technique in, 3568.

spraying technique in, 5100. a stepped spectrum in, 3062.

thin-walled carbon electrodes in, 3565. time-resolved spectra in, 828. two rotating electrodes in, 5099.

vacuum cup electrode for analysis of soln. by. 2545.

visual spectrophotometer for, 1210.

with variable internal standard, evaluation of calibration data in, 827.

Spectrography, emission, X-ray, analysis of highly radioactive samples by, 3103.

apparatus for continuous analysis of soln, by, 4587.

applications of, 317, 318, 2031, 2608.

control of precision in, 3065.

cooled sample holder for use in, 3066.

double crystal monochromator-collimator for, 3570.

fundamental developments in, review, 5125. geometrical collimation of the beam in, 839.

modified apparatus, for use with a Geiger-Müller counter in, 838. Rayleigh scattering method for heavy atoms in

low Z media, 3067. reduction of matrix effects in, 3068.

reviews, 336, 5137.

techniques for soln., 2567.

use of ion exchange resins in, 5136. of radioactive source in, 2566.

Spectrometer, nuclear induction, construction of, 333.

Spectrometry, absorption, X-ray, comparator for, 2569.

fundamental development in, review, 5125. new standardisation techniques for measurements in, 2568

review, 316.

use of Laue diffraction technique for multichannel analysis, 4085. of projection X-ray microscope in, 315.

Spectrometry, atomic-absorption, application to analysis, 353, 2031.

combination of, with null-point technique, 4588. determination of Fe and Mn by, in soil and plants, 3252.

Spectrometry, fluorescence, X-ray. (See Spectrography, emission, X-ray.

Spectrometry, nuclear magnetic resonance, apparatus for, 846, 4625.

fundamental developments in, review, 5125. high-resolution, with magnetically controlled radio frequency, 4626. of various compounds, 1082.

Spectrometry, Raman, recording device for, 3063. simple device for the spectra of solids, 3064.

Spectrometry, y-ray scintillation, analysis of mixtures of radio-isotopes by, 2586.

apparatus for, 2031. calibration of NaI for use in, 2031.

Spectrophotometer, atomic absorption, 5102. combined with microscope, 2562.

with polarimeter for measuring optical rotatory dispersions, 5112

control of temp. in cells of, 5107.

Dobson ozone, wedge-calibration method for, 2561.

grating, for the Schumann u.v. range, 2558. high-temp., assembly for, 3080.

Spectrophotometer-continued

i.r., 5108

apparatus for observing reactions in, 3078. automatic slit drive for, 4082.

auxiliary recorder for, 2005.

double-beam automatic prism - grating for,

for use in the 1.0 to 1.9μ region, 2006. in the 12.5 to 25 µ region, 3072.

KBr disc holder for, 2564.

single-flow, with gas modulation, 1623.

use of lead sulphide cells in, 2007. with prism/grating double monochromator, 833.

micro-, for u.v. and visible spectra, 830. highly sensitive recording, 2556.

SF-4, light sources for, 2560 wavelength calibration of, 2004.

Spectrophotometer, flame, spectrum recording, 5503.

Spectrophotometry, absorption, application of "replacing absorbance coefficients" method in,

to biochemical analysis in the visible and u.v. regions, 3102.

differential densitometer for, 2554.

fundamental developments in, review, 5125.

indirect methods for, 3070. influence of slit width in, 700.

method least-squares for multi-component analyses, 3599.

of dense light-scattering material, 5502.

of semi-opaque samples, 4582. survey of instruments for, 2001

use of differential method in, 4079. Spectrophotometry, absorption, infra-red, analysis of combustion products by, 2031.

of rusts by, 2031.

of small quantities by, 5110. application to analysis, 3102.

to one drop of aq. soln., 2031. to structural analysis, 3102.

cell arrangement for increased utilisation in process studies, 2009.

compensation technique for, 312.

continuous reference beam attenuator for use in, 4583

evaluation of instruments used in, 3071 fundamental developments in, review, 5125. heated vapour absorption cell for, 5504.

hydroxyl-group absorption in K halide discs in,

interaction between sugars and steroids with alkali halides in pressed discs, 3076.

low-temp. cell for, 2563. micro gas cell for, 1212.

modification of the Perkin - Elmer 12-C instrument for linear wavelength recording, 4083.

of aq. soln., 3073.

of fused salts, 5505.

of solid organic compounds, 165. polyethylene cells for use in, 1625.

KBr pellets for, advantages and limitations of,

die for preparation of, 4585. method of producing, 1624, 3074.

use of, with reflecting microscope, 4083.

prepn. of mulls for, 4584. reference-beam attenuator for, 311.

sampling technique for, 1213. for volatile and pyrophoric materials, 5109. spectra - structure correlations in. 4084.

technique for polishing BaF, windows for use in, 4586

Spectrophotometry, absorption, infra-red-continued use of ammonia spectrum as measure of instrument resolution, 313.

of near region, in analysis, 3102.

of published data for quant. analysis, 164. of sodium azide as internal standard in, 2008.

Spectrophotometry, absorption, microwave, applications of, 2606.

Spectrophotometry, absorption ultra-violet, collaborative readings with the Cary-14 instrument,

concomitant measurement of pH and extinction in, 832.

modified cell for, 3569.

of powdered salts, in range 220 to 400 mu, 1621. purification of solvents for, 2559.

use of, in determination of structure of steroids,

of interference filters in, 2557.

Spectrophotometry, flame, bibliography covering the period 1956 to March 1959, 2589, 4091. use of thermite flare for, 873.

Sphingomyelin, determination, in serum, i.r. spectrophotometric, 1499. paper chromatographic, 5365.

separation, 2900.

Spinal cord, determination of phosphate esters of choline, ethanolamine and serine in, by ion exchange, 3897.

Spirits, analysis of, 3512. determination of Cu in, 4490. spectrophotometric, 2472.

of Pb in, 1932. Spodumene, determination of Li in, 362. Standard reference materials, development of, in U.K. and U.S.A., review, 3109.

Standards, volumetric, purity of ferrous ammonium sulphate, 1245.

use of sulphamic acid as, 2044.

of tri(hydroxymethyl)methylamine as, 1244. Stannous chloride, determination, with ICl, 855. Staphylokinase, determination of activity of, spectrophotometric, 4989.

Starch, analysis of, 2275. determination, 4928.

in bandages, 4882. in cane sugar products, 2446.

in paper, comparison of methods for, 3372. of amylose in, spectrophotometric, 4414. of moisture in, 3979.

spectrophotometric, 1829.

hydrolysate, chromatography of, 3410. oxidised, detection, spectrophotometric, 4375.

Statistics, application to analytical chemistry, review, 5125. comparison of accuracy of analytical methods by, 1234.

in clinical analysis, 849.

Steel, analysis of, 130, 530, 1349.

automatic spectrographic, 3105. polarographic, 145.

spectrographic, 1006, 2228, 2733, 3257.

use of direct-recording spectrographs for, 4274. with steelometer ST-7, 3255.

austenitic, determination of Al in, spectrographic, 3750.

of ferromagnetic impurities in, by electron diffraction, 140.

cementite in, analysis of, 5250. chromium - nickel, determination of Se in, 3759. determination of Al in, 4278.

B.S.I. method for, 1362. phase analysis of, 1360. radiochemical, 2640.

Steel, determination of Al in-continued spectrographic, 1361, 3260, 3750. spectrophotometric, 2232, 2233. spectrophotometric, 2232, 2233.
of aluminum nitride in, 4279.
of Al₂O₃ in, photometric, 1014.
of As and P in, spectrographic, 3263.
of B in, 532, 1007, 3748, 3749, 4277.
photometric, 1757. of Ca in, 3756. of C in. 1009. gasometric, 1758. spectrographic, 138, 3261. of Cr in, 143, 4789. spectrophotometric, 2233. of Co in, spectrophotometric, 3768. of Cu in, 2230, 4125. photometric, 376, 3756. spectrophotometric, 3632. of Fe and Ni in, spectrophotometric, 3258. of FeO in, photometric, 1014. of gases in, spectrographic, 137. of H in, 141, 4788. gas chromatographic, 5248. spectrographic, 2615. of Pb in, 3752, 2230. B.S.I. method for, 5247. spectrophotometric, 432, 534. of Mg in, photometric, 3756. of Mn in, 2732, 3740, 3761, 4283. photometric, 1346. of MnO in, photometric, 1014. of Mo in, 966, 4281. amperometric, 2235. polarographic, 144, 4104. spectrophotometric, 539. of Nb in, 1760. radiometric, 537. spectrophotometric, 1013. and W in, spectrophotometric, 1335. of nitrides in, 1008. of N in, 1365, 4282, 4788. gas chromatographic, 5248. spectrographic, 3754. of O in, 1366, 1367, 1368, 4788. gas chromatographic, 5248. of P in, 1012, 3756. spectrophotometric, 2233, 3262. of residual elements in, spectrographic, 1359, of Si in, 1363, 3619, 3680, 3751. spectrophotometric, 2233. of SiO2 in, 1014 of S in, 538, 1369, 1758. flowmeter for use in, 5483. spectrophotometric, 3758. of Ta in, radiometric, 537. of Sn in, 1010, 1011. of Ti in, amperometric, 535. spectrographic, 1364 spectrophotometric, 539. of trace elements in, spectrographic, 138, 4276. with direct recording, 1755. of W in, 863. of U in, fluorimetric, N.B.S. standard for,

1371. of V in, spectrographic, 863. spectrophotometric, 142, 536, 539, 2170. high-alloy-, determination of Co and Ni in, 3762. and complex, analysis of, spectrographic, 3747. inclusions in, determination, in low-chromium steel, 139 of non-metallic, in, 1756. of oxide, spectrographic, 2734. electrolytic isolation of non-metallic, 4594.

Steel-continued liquid-sampling technique for determination of H in, 3256. Mg alloy-, analysis of, 3619. separation of structural constituents of, electrolytic, 529. stainless, analysis of, by X-ray fluorescence, 2229. determination of B in, spectrographic, 3658. of Co in, 3762. of Ni in, 3762. of Nb in, spectrographic, 3264. of Ta in, spectrographic, 3264. spectrophotometric, 1013. of Ti in, spectrophotometric, 3753. tungsten-, determination of Cr in, 1761. of V in, 1761. vanadium-, determination of Mo in, 540. of P in, 1759, 3755. of W in, 540. Steelometer ST-7, analysis of soln. by, 3255. Steroids. (See also individual compounds.) analysis of, i.r. spectrophotometric, 165. application of thin-layer chromatography to, 2410. changes in i.r. absorption spectra in pressed discs, 3076. detection, paper chromatographic, 2904. determination, 3453, 3923. in urine, 1149. spectrophotometric, 1879. of structure of, u.v. spectrophotometric, 5106. paper chromatographic, 234. spectrofluorimetric, 4975. spectrophotometric, 4977. halochromy and halofluorescence of, 1524. 17-hydroxy-, separation, in urine, chromatographic, 2910. keto-, identification, in urine, 1151. reduction, polarographic, 693. liquid scintillation counter for, 2905. △4-3-oxo-, determination, in urine, spectrophotometric, 2906. separation, by ion exchange, 3454. from urine, chromatographic, 2907.

17-oxo-, determination, in plasma and urine, 3455. in serum, chromatographic, 2909. in urine, 3926. paper chromatographic, 691. spectrophotometric, 1150. spectrophotometric, 1525.

separation from corticosteroids, 686. separation, electrophoretic, 1153. paper chromatographic, 235, 3925, 4971. unsaturated, far u.v. spectra of, 688.

Sterols. (See also individual compounds.) analysis of, gas chromatographic, 5386.

chemistry of the Liebermann - Burchard reaction for, 2901. determination, in fats, paper chromatographic,

4491. 3β -hydroxy-, determination, 4976.

in serum and tissue, spectrophotometric, 233. separation, paper chromatographic, 3447, 4438. Stibophen, determination, by activation analysis,

3488.

Stilboestrol, determination, 1556. Stigmasterol, separation, from stigmastanol, paper chromatographic, 4438.

Stopcocks, automatic turner for, 1195.

Stramonium, assay of, 4447.
Strandin, determination of neuraminic acid in, spectrophotometric, 3445. Streptimidone, biology of, 3958.

Streptomycin, determination, in fermentation media, spectrophotometric, 2431.

photometric, 710.

Strontium, detection, in presence of Ba, 43. determination, 4141.

flame photometric, 3638.

flame spectrophotometric, 2079, 5162.

in biological materials, spectrophotometric, 1844.

in bone, flame spectrophotometric, 5345. spectrographic, 42, 4398.

in calcite, dolomite and barytes, spectrophotometric, 3150.

in milk, spectrographic, 42, 4398.

in milk powder, 4475. in natural water, by electrodialysis, 1956. radiochemical, 1677, 5042.

in plants, spectrographic, 42. in presence of Ca, 397.

and Ba, flame photometric, 897, 3644.

in soil, radiochemical, 1677.

in urine, 4090, 4399.

in vegetation, spectrographic, 4398. of *9Sr and *9Sr, in biological materials, 637, 2031

in bone, 638.

in natural water, 283.

paper chromatographic, 3643. radiochemical, 1284, 2634, 3645.

simultaneously with Ca, in urine and serum, flame spectrophotometric, 3869. spectrographic, 2139.

extraction of, 4142.

oxine complexes of, 4676.

separation and determination of 90Sr in presence of 187Cs, 2031.

from Ba, paper electrochromatographic, 2080. and Ca, 398.

from Ca, 41, 2031.

from other radio-isotopes, 3620.

from Y, electrolytic, 1693.

from Ce, La, and Pr, by focusing ion exchange, 4115.

of Ba from, in presence of lead, 2082.

of 90Sr from calcium, in milk, by ion exchange,

Strontium phosphate, X-ray powder diffraction patterns of, 898

Strychnidine, use of, in determination of Ce, spectrophotometric, 2655.

Strychnine, determination, spectrophotometric, 3463, 5404.

Styrene, determination, in copolymers, spectrophotometric, 1100.

in synthetic polyester resins, polarographic, 4887.

polarographic, 5294.

[See 2-Nicotinoyl-2-(3-pyridyl)propane.] Su 4885. Sublimation, fractional, technique for, 3547.

progress in 1958, 2033.

Succinate, determination, spectrophotometric, 212. Succinic acid, analysis of mixtures of, with adipic and glutaric acids, chromatographic, 2282.

critical soln. temp. of, with some systems, 4826. determination, in urine, paper chromatographic, 650.

paper chromatography of, use of electrometric contact method in, 1416.

Succinic dehydrogenase, determination of activity of, spectrophotometric, 3935, 4442.

Succinylcholine chloride. (See Suxamethonium

Sucrose, determination, 4331.

in milk, 735.

Sucrose, determination-continued in sugar beet, 2445. by isotope dilution, 3492.

of moisture in, 5426. electrometric, 5427.

polarography of, effect of temp. on, 3491. refractive indices of, confirmation of error in International Sugar Scale (1936), 2273.

Sucrose diacetate hexaisobutyrate, use of, as station-

ary phase in gas chromatography, 5091. Sudan III. (See Dyes, C.I. Solvent Red 23.) Sudan black B. (See Dyes, C.I. Solvent Black 3.)

Sugar beet, determination of betaine in, by ion exchange, 5478.

of Ca in, flame spectrophotometric, 259.

of glutamine in, paper chromatographic, 3499.

of sucrose in, by isotope dilution, 3492. of total acid in, by ion exchange, 3500.

Sugar cane, determination of dextran and starch in, 2446.

juice, determination of Ca in, spectrophotometric,

of invert sugar in, 2447.

of organic acids in, 2448. Sugar cane wax, analysis of, 1853.

Sugar, invert. (See Invert sugar.)

Sugar, raw, analysis of, standard method for, 1911

determination of Ca in, flame spectrophotometric,

of phosphate in, spectrophotometric, 5011. Sugar, refined, analysis of, standard method for,

determination of Ca in, flame spectrophotometric, 259.

of water in, 5426.

by Karl Fischer method, 3490.

(See also Carbohydrates and individual Sugars. sugars.)

aldose, determination, spectrophotometric, 2767. analysis of, by ion exchange, 2372. deoxy, detection, 4927.

paper chromatographic, 3412. determination, colorimetric, 5276.

spectrophotometric, 1848

separation, paper chromatographic, 3879. detection, 4822.

in natural water, spectrophotometric, 3534. in urine, 4924.

on paper chromatograms, 5355. determination, 3877, 4331, 4928.

enzymatic, 1560.

in feeding-stuffs, 4528 in malt extract, 4483. in potatoes, 3984.

by ion exchange, 2373. in silage, 4528.

in sulphite liquor, 197, 2333.

in wood, paper chromatographic, 5354. paper chromatographic, 1062, 5274.

spectrophotometric, 1120. differentiation, from polyols, paper chromato-

graphic, 2768. identification, with phenylhydrazine, 2035.

i.r. absorption spectra of, effect of interaction with halides in pressed discs on, 3076. phosphates of, identification, 2769.

reaction with anthrone, mechanism of, 2031. reducing, determination, 2770, 4471. in blood, spectrophotometric, 2370.

spectrophotometric, 2369. separation, by ion exchange, 2274.

from amino acids and carboxylic acids, by ion exchange, 2383.

Sugars, separation—continued from organic phosphorus compounds, paper chromatographic, 4945.

from urine, paper chromatographic, 3878.
paper chromatographic, 1412.
Sulphadiazine, determination, in blood and urine,

identification, 3875.

Sulphadimethoxine, determination, in blood, 2365. Sulphaemoglobin, determination, in blood, spectrophotometric, 684. Sulphaturazole, determination, 2945. in blood, 2365.

in presence of isoniazid, 3486.

Sulphaguanidine, determination, photometric, 5399. Sulphamerazine, determination, in blood and urine, 3403

identification, 5421.

Sulphamethazine, determination, photometric, 5399. Sulphamethizole, identification, 3951.
Sulphamic acid, methods for the inspection of, 2588.

use of, as primary standard in non-aq. titrations,

Sulphanilamide, determination, in blood and urine, 3403

photometric, 5399.

Sulphapyridine, determination, in blood and urine,

photometric, 5399.

Sulphasomidine, identification, 2918.

Sulphate, adsorbed on thoria, determination, i.r. spectrophotometric, 80.

automatic analyser for, 1217.

detection, 101, 4231. determination, 102, 104, 468, 960, 4232, 4751, 4752.

apparatus for, 3576.

by ion exchange, 1336, 2703. by "membrane voltammetry", 2185.

flame photometric, 11, 2031.

in calcium superphosphate, 962, 2499.

in chromium plating baths, 105.

in hydrogen peroxide, nephelometric, 471.

polarographic, 470. in natural water, soil and biological materials, 3216.

in plutonium, 2187.

in presence of Cr, 472. of phosphate, 89. of Na, 103.

in pyrites, flame photometric, 2704. spectrophotometric, 1719.

in reagent chemicals, i.r. spectrophotometric, 5221.

in slag, spectrophotometric, 1719.

in sulphuric acid, flame photometric, 2704.

in uranium, 2587.

in urine, 640. of S in, 2750.

spectrophotometric, 469, 3872, 4233.

organic, determination, spectrophotometric, 4812. titration curve of, with barium chloride, 961.

Sulphate black liquor, determination of tall oil in, 3374.

Sulphathiazole, determination, during manufacture of, 1164.

in blood and urine, 3403. photometric, 5399.

Sulphatoceric acid, stabilisation of, for volumetric analysis, 2045.

Sulphide, analysis of, in soln., 2051. determination, 2148, 2658.

in metals, photometric, 3215. in natural water, spectrophotometric, 2495. in presence of H₂S, potentiometric, 5220.

Sulphides, organic, analysis of, gas chromatographic, 2702.

determination, 4340.

identification, 3321.

separation, gas chromatographic, 2783.

Sulphisoxazole. (See Sulphafurazole.) Sulphite, determination, 14, 4230.

in presence of thiosulphate, 3718.

Sulphite liquor, determination of NH4+ in, 2687. of Ca in, by ion exchange, 2334. of Cl- in, by ion exchange, 3242.

of sugars in, 197, 2333. Sulphonamides. (See also individual compounds.)

analysis of, 5419.

paper chromatographic, 2944.

determination, 3414. of amino nitrogen in, 3796.

spectrophotometric, 5420. identification, 2426, 3462.

reactions of, with copper acetate and amines, 2441.

u.v. spectra of, 3487.

Sulphonazo. (See Di-[3-(8-amino-1-hydroxy-3:6disulpho-2-naphthylazo)-4-hydroxyphenyl]sulphone.

Sulphones, polarographic behaviour of, 4850.

Sulphonic acids, use of, in non-aq. titrations,

Sulphoxides, polarographic behaviour of, 4850.

Sulphur, absolute counting of 35S, 4749, 4750.

assay of irradiated discs of, 5143. determination, 14, 3102.

in air, photometric, 1950.

in barium polysulphide, 4229.

in basic slag, 2744

in biol. materials, by liquid scintillation counting. 4906.

in carbon black, 953.

in coal, 1823.

in cobalt, spectrophotometric, 3758.

in fuel gas, spectrophotometric, 3840.

in hydrocarbon waxes, spectrophotometric, 3840.

in hydrofluoric acid, spectrophotometric, 1718.

in iron, 1369, 1758, 3757. spectrophotometric, 3758. use of flowmeter in, 5483.

in iron alloys, 533. by ion exchange, 1015.

spectrographic, 1370.

in Fe - Si alloys, coulometric, 136.

in metals, photometric, 3215.

in minerals, 5219.

in natural water, spectrographic, 1186.

in ointments, radiometric, 4467.

in ores, 955.

in organic compounds, 169, 555, 559, 2746, 2750, 3083, 3102, 3284, 3292, 3293, 3779, 3782, 3791, 3792, 4805, 4806, 4809, 4810. amperometric, 556.

spectrophotometric, 557.

in petroleum, by X-ray fluorescence, 3360.

in petroleum products, 2746, 4864, 4865, 5314. apparatus for, 5315. burner for, 5119.

in plant tissue, 1477.

and animal tissue, 3871.

in pyrites, spectrophotometric, 1719.

in reforming catalysts, 3772.

in rocks, 2701.

in rubber, 2348. in serum, by liquid scintillation counting, 4906.

in slag, spectrophotometric, 1719.

Sulphur, determination-continued in steel, 538, 1369, 1758. spectrophotometric, 3758. use of flowmeter in, 5483. in sulphates, 2750. in uranium trioxide, spectrophotometric, 1718. in urine, by liquid scintillation counting, 4906. in viscose, polarographic, 4885. in wool, 2336. in yellow phosphorus, 954. of impurities in, 466. simultaneously with C, in steel, 4280. Sulphur dioxide, analysis of, gas chromatographic, 2702 determination, in air, 769, 4509. by galvanic micro-piles, 2610. in dried fruit, spectrophotometric, 743. in food, 3991. in fuel gas, 4371. in generator gas, 4861. in mixtures with SO₃, 2188. in sulphuric acid, u.v. spectrophotometric, 99. polarography of, 1721. Sulphur, organic compounds of, identification, gas chromatographic, 1427. paration, paper chromatographic, 674. Sulphur trioxide, determination, in air, 769. in flue gases, 4371. in mixtures with SO, 2188. Sulphuric acid, analysis of mixtures of, with nitric acid, conductimetric, 5222 detection, in insoluble sulphates, 100. determination, in acetylating mixtures, 959. in anodising soln., 1689. in electroplating soln., 958 of As in, potentiometric, 90. of binary mixtures with HNO₂, HCl, H₂PO₄ and HClO₄ potentiometric, 868.
of HNO₃ in, 944. of SO, in, u.v. spectrophotometric, 99. of SO, 2- in, flame photometric, 2704. Sunset Yellow FCF. (See Dyes, C.I. Food Yellow 3.) Suprifen, determination, by ion exchange, 1167.
Surface-active agents. (See also Detergents; Quaternary ammonium compounds; Tweens.) anionic, analysis of, 617. identification, i.r. spectrophotometric, 195. cationic and non-ionic, separation, by ion exchange, 1449. determination of fatty acids in, spectrophotometric, 3519. conductimetric, 4376. spectrophotometric, 3369. non-ionic, determination, 2839. in solvent extracts from wool, 4872.

polarography of, 4377. separation, from detergents, 4871. paper chromatographic, 2482. Surfactants. (See Surface-active agents.) Suxamethonium chloride, determination, 1904. Synthesis gas, determination of Ar in, by X-ray absorption, 2618.

(See 2:4:5-Trichlorophenoxyacetic acid.)
[See 1:1-Dichloro-2:2-di-(p-chlorophenyl)ethane.] THPC. [See Tetrakis(hydroxymethyl)phosphonium chloride. TNT. (See Trinitrotoluene.)

Tabernanthe iboga, determination of total alkaloids in, 706.

Tall oil determination, in sulphate black liquor, Tannin, determination, in beer, u.v. spectrophotometric, 1572.

in malt wort, u.v. spectrophotometric, 1572.

Tantalic acid, determination of Nb in, spectro-graphic, 4745. of Ti in, spectrographic, 4745.

Tantalum, assay of irradiated discs of, 5143.

determination, in carbides, 4201. spectrographic, 5216.

in granite, by isotope dilution, 4227. in hafnium, spectrophotometric, 2180. in iron alloys, 950.

in niobium, by X-ray fluorescence, 2177. spectrographic, 2179.

spectrophotometric, 96, 2180. in niobium pentoxide, 2178. spectrographic, 2181.

in presence of Nb, 951. in rocks, by neutron activation analysis, 5217.

in stainless steel, spectrographic, 3264. in steel, radiometric, 537

spectrophotometric, 1013.

in zirconium, spectrophotometric, 2180. in zirconium alloys, spectrophotometric, 1716.

of H in, spectrographic, 2615. of H, N and O in, 15.

of Nb in, spectrophotometric, 2698.

of O in, 4748.

of Ti in, polarographic, 2670. extraction of, from sulphate soln., 2699. separation, from Nb, 2696, 3211, 3713.

by ion exchange, 2176. from Nb and Ti, 5215.

from other elements, in high-temp. alloys, by ion exchange, 2056.

of Ti from, chromatographic, 5190. together with Nb, from titanium, 4743.

Tantalum alloys, analysis of Ta - Nb, 1728.

determination of Nb, in Nb - Ta, by oscillographic polarography, 2175.

Tantalum ores, analysis of Ta - Nb, 2700.

Tantalum pentoxide, determination of Nb and Ti in, spectrographic, 2181.

Tartaric acid, determination, 1793, 2271.

paper chromatography of, electrometric contact method for, 1416.

Tartrazine. (See Dyes, C.I. Acid Yellow 23.)

Tesseed oil, detection, in olive oil, 2994. modification of Fitelson reaction for, 5447. determination of iodine value of, 5030.

Technetium, determination, in fission products, electrochemical, 4264. in minerals, 2031.

polarographic behaviour of, 2222.

separation, from Mn, Mo, Re and Ru, 4776. from Re, electrophoretic and paper chromato-

graphic, 1745.

Teeth, determination of Ca in, 894.

Television screens, determination of alkaline-earth metals and silica in, spectrographic, 2636.

Telluric acid, determination of Se in, 4239. Tellurite (anion), separation, from SO₄³⁻, 476. use of, in reduction of manganate, 3742.

Tellurium, adsorption of, by anion exchange resins,

determination, 2191, 3722.

in bismuth, 477.

in copper alloys, polarographic, 1724. in lead alloys, polarographic, 2192.

in Pb - Sb - Te alloys, 3218.

Tellurium, determination-continued in meteorites, by neutron activation analysis, 4753

in presence of Sb, spectrophotometric, 2193. in selenium, spectrographic, 2057.

of Al in, by ion exchange, 5225. of Se in, spectrographic, 2057.

spectrophotometric, 4238. of Na in, spectrographic, 2057.

potentiometric, 91. spectrographic, 866, 2057. precipitation, with SO₃, 4754.

separation, 4240. from Sb, In and Sn, by ion exchange, 5141.

from electrolytic slimes, 5258. from iodide, by ion exchange, 964.

from Fe, 3721. from Mo and Ba, 900.

from Se, 475, 2706.

from U, by ion exchange, 485. from Zr, 900.

Tellurium alloys, determination of Te in Te - Pb -Sb. 3218.

Tennecetin, chemical and physical properties of, 1160

Terbium, determination of other rare-earth metals in, spectrographic, 2117. Terephthalic acid, determination, in presence of

toluic acid, 3819. separation, paper chromatographic, 3336, 4848.

Terpenes, separation, gas chromatographic, 4362. Terphenyl, analysis of, gas chromatographic, 2791. determination, 2304.

Test-tubes, B.S.I. specification for, 3022.

Tetra-alkyltetrazenes, separation and determination, gas chromatographic, 1442.

Tetrabutylammonium hydroxide, use of, in analysis of binary mixtures of strong acids, 868.

Tetrabutylammonium iodide, purification of, for use in polarography, 2580.

Tetracaine, detection, 3462.
determination, as tetraphenylborate, u.v. and i.r. spectra of, 720.

Tetrachlorophthalic anhydride, relation between molecular structure and complex formation with, 2031.

Tetracycline, assay of, 708.

determination of bromtetracycline in, photometric, 4454.

of chlortetracycline in, photometric, 4454. spectrophotometric, 711, 712.

identification, photometric, 1895.

Tetraethylammonium hydroxide, use of, for titration of organic acids, 2775.

Tetraethyl-lead, determination, in petrol, 2824, 3837.

in petroleum, polarographic, 615. of hexaethyldilead in, polarographic, 1408, 3323. Tetraethylthiuram disulphide, use of, in determina-

tion of Cu in metals, 2070. Tetrafluoroborates, determination of F- in, 2216. Tetrahydronaphthalene, i.r. spectrum of, 1814.

Tetrahydronaphthols, acyl-, reactions of oximes of, with metal ions, 354.

1:2:5:8-Tetrahydroxyanthraquinone, use of, in determination of B in steel, photometric, 1757. chloride), Tetrakis(hydroxymethyl)phosphonium

determination, in textiles, paper chromatographic, 3375. NNN'N'-Tetrakis-(2-hydroxypropyl)ethylenediamine,

metal chelates of, use of, in analysis, 2049. NNN'N'-Tetrakis(phosphonomethyl-1: 2-diaminocyclohexane. (See cycloHexanediaminetetra-methylphosphonic acid.) Tetralin. (See Tetrahydronaphthalene.)

Tetramethylammonium hydroxide, use of, in universal buffer soln., 341.

Tetramethyldiaminodiphenylantipyrinylmethanol,

use of, in determination of Tl, 2102.

Tetramethylenedithiocarbamic acid, NH₄ salt, distribution coefficient for metal complexes with, 2611. Tetra-(4-methylpyridino) nickel dithiocyanate, use

of, in column chromatography, 4048. Tetraphenylarsonium chloride, use of, in determina-

tion of Sn, 1011. Tetraphenylboron, determination, 4853.

NN'N''-Tetraphenyloxamidine, use of, in determination of Cu, 372, 4124.

Tetrazolinium salts, identification, electrophoretic.

Tetryl, analysis of crystalline structure of, 5338. determination, 5335.

Textiles, determination of APO and THPC in. paper chromatographic, 3375.

of coper 8-quinolinate in, spectrophotometric, 4038.

of whiteness of, reflectometer for, 4087. wet oxidation of, 1396.

Thallie salts, microcrystalloscopic reactions of, 915.

Thallium, analysis of, spectrographic, 2103. analytical chemistry of, 3165.

detection, 55, 367. determination, 56, 58, 416, 1253, 2101, 2648, 2649, 3127, 4690.

flame photometric, 3166.

in biol. materials, photometric, 5347. in cadmium, polarographic, 4684.

in cereals, spectrophotometric, 2869. in La - Tl alloys, 1309.

in lead, photometric, 2123. in meteorites, radiochemical, 1040.

in presence of Ga and In, 2099. in rocks, by neutron activation analysis, 4669.

in silicates, spectrographic, 2622.

in sodium iodide, 2104.

in urine, spectrophotometric, 2869.

in zinc in presence of Pb, polarographic, 1286.

of Cd in, spectrographic, 2057. of Cu in, spectrographic, 2057.

of Pb in, 4172.

spectrographic, 2057. of Zn in, 4172.

spectrographic, 2057. polarographic, 3617, 3674. radiometric, 851.

spectrographic, 53, 866, 2057.

spectrophotometric, 55, 415, 2031, 2102, 2650, 3673, 4691.

separation, from accompanying elements, 1308. from Al, Ga and In, chromatographic, 3670. from dilute soln., 914. from In, Zn and Cd, electrolytic, 1658.

Thenoyltrifluoroacetone, use of, in analysis, 339, 4643, 4693, 4779.

Theobromine, detection, 3952. determination, 1541, 1549.

dihydroxypropyl-, detection, 3952. hydroxypropyl-, detection, 3952. separation, from theophylline and caffeine, spectrophotometric, 2427.

Theophylline, detection, 3952. determination, 255.

spectrophotometric, 5408. dihydroxypropyl-, detection, 3952. hydroxyethyl-, detection, 3952. hydroxypropyl-, detection, 3952.

separation, from theobromine and caffeine, and determination, spectrophotometric, 2427.

Thermal analysis, apparatus for, use of, in hazardous atmospheres, 5513.

combined with dilatometry, apparatus for, 3582. determination of physical changes in, apparatus

differential, apparatus for, 1220. review of progress in, 5125. thermistorised apparatus for, 321. use of i.r. heating in, 1630.

linear voltage temp. furnace for, 320. Thermistors, use of, in determination of mol. wt., 850.

Thermobalance, electronic, applications in steel industry, 3581.

for use under pressure, 3084.

recording, for vacuum and pressure studies, 2574. Thermometers, general purpose, B.S.I. amendment for, 3579.

secondary reference, B.S.I. amendment for, 3580. Thiamine, determination, in bread, 4499.

in cereals, 4499.

in a corn-meal enrichment mixture, 4500.

in flour, 4499. in food, 5460. in milk, 1181.

in yeast, 1181.

spectrophotometric, 759.

OS-dibenzoyl-, determination, metric, 760.

extraction of, 4498.

2-hydroxyethyl disulphide of, determination, spectrophotometric, 760.

identification, 3951.

improvements in the agar-plate test for, 3004. separation, paper chromatographic, 3003

Thioacetamide, titration of, 1426

2-Thiobarbituric acid, determination, spectrophotometric, 5289.

use of, in determination of nitrite, spectrophotometric, 1328.

Thioctic acid. (See 6: 8-Dithio-octanoic acid.) Thiocyanate, determination, 4652.

polarographic, 4699. identification, 123.

isoThiocyanate groups, determination, 3296. isoThiocyanates, analysis of Raman and i.r. spectra of, 4833.

Thiofluorescein, use of, as indicator in determination of Hg and Ag, 2086, 5155. Thioglycollic acid, determination, 2784.

use of, as reagent for Zr, 2671. Thioketones, u.v. spectra of, 2819.

Thiols, alkane-, determination, in hydrocarbons, 612.

analysis of, gas chromatographic, 2702.

detection, 4830.

determination, in bread, 1562.

identification, gas chromatographic, 1427. separation, gas chromatographic, 2783.

paper chromatographic, 603.

Thiolutin, determination, in mixture with aureothricin, i.r. spectrophotometric, 2935.

Thionylamines, u.v. spectra of, between 200 and 370 mµ, 1428.

Thio-oxine. (See Mercaptoquinoline.)

Thiophen, determination, 5311.

identification, gas chromatographic, 1427.

2-Thiophen-trans-aldoxime, use of, as reagent for Pd, 4291.

Thiosemicarbazide, detection, 2299. determination, 4831, 5290.

Thiosulphate, determination, 14, 4652. in gelatin, polarographic, 4868. in presence of sulphite, 3718.

Thiosulphinate, determination, 1074. spectrophotometric, 613.

Thiosulphonate, determination, 1074. Thiouracil, separation, from thiourea, paper chrommatographic, 602.

Thiourea, deriv. of, determination, 4340.

determination, 1425, 3809, 4831.

Raman spectra of, 3064. separation, from thiouracil, paper chromato-

graphic, 602.

Thorite ores, determination of Th in, 2587.

spectrophotometric, 79. Thorium, analysis of, 3119.

of ThO₂ - UO₂ slurries, 335. of Th - U ore, radiometric, 1735.

detection, 445.

determination, 57, 340, 446, 447, 448, 941, 1326, 2151, 2679, 2681, 2682, 2714, 3196, 3698, 4210, 4211, 4653, 4724, 5198, 5201, 5202, 5203

in alloys, 4721.

in minerals and ores, photometric, 2152.

in monazite, 2680.

spectrophotometric, 5199.

in natural water, by ion exchange, 780. in Pu - Th alloys, spectrophotometric, 2155. in presence of Fe, La, U and Zr, 4726.

in radioactive ores, 2031.

in silicate rocks, by ion exchange, 4212. spectrophotometric, 3195.

in soln., in presence of other elements, spectrographic, 1252.

in thorite ores, 2587.

in uranium trioxide, spectrophotometric, 2154. in zircon, photometric, 3197.

of B in, spectrophotometric, 4154.

of Cl in, 506.

of In in, spectrophotometric, 3671.

of 230Th, from α-activity of, 5204. photometric, 2153.

spectrographic, 942.

spectrophotometric, 79, 1327, 3697, 5200. X-ray spectrofluorimetric, 982.

extraction, with thenoyltrifluoroacetone, 4723. identification, with azo compounds, 3601. separation, 4182.

from Ce, by ion exchange, 1703. by use of alginic acid, 4727.

from Pa and U, 5235. from rare-earth metals, 3177.

by ion exchange, 943. from uranium, 4764.

from zirconium, by ion exchange, 943. Thorium alloys, analysis of Th - W, 5196.

Thorium dioxide, analysis of, spectrographic, 2683.

determination, in air, spectrographic, 3528. in monazite, by X-ray fluorescence, 1704. of adsorbed sulphate on, i.r. spectrophotometric, 80.

slurries of, analysis of, 335.

Thorium nitrate, separation of Ac, Bi, Pb and Ra from, by ion exchange, 2156.

Threonine, determination, spectrophotometric, 3432. Thrombin, determination, spectrophotometric, 3459.
Thulium, determination of other rare-earth metals

in, spectrographic, 2117.

Thyme oil, determination of thymol in, coulometric, 4875.

Thymol, determination, in thyme oil, coulometric, 4875.

Thyronine, iodo- deriv. of, detection, paper chromatographic, 1863.

Thyroxine, determination, in plasma, by double isotope dilution, 1507.

Thyroxine continued separation from iodotyrosines and iodothyronines, by ion exchange, 3435.

Tin, detection, by luminescence, 2122.
fluorimetric, 3686. in tungsten ores, 5187. determination, 1696, 3684. amperometric, 2666. by electrolysis, potentiostat for, 5122. in biol. materials, spectrophotometric, 5348. in brass, spectrographic, 4667. in copper, spectrophotometric, 1315. in Cu alloys, 351. B.S.I. method for, 5152. spectrophotometric, 1315, 2667. in food, 730. polarographic, 1558. in iron, 1010, 1011. in lead, photometric, 71. spectrographic, 2669. in lead alloys, spectrophotometric, 2667. in mixtures, oscillopolarographic, 4735. in nickel, spectrographic, 2239. in presence of Bi, Pb and Sb, polarographic, 2054. of Pb, polarographic, 4191. in solders, 4709. in steel, 1010, 1011. in Ti alloys, spectrographic, 927. in type metal, spectrographic, 431. in zinc, photometric, 71. in zinc alloys, photometric, 71. in Zircaloy, 925. polarographic, 926. spectrographic, 2146. in zirconium, polarographic, 5188. in zirconium alloys, 2143, 5188. of Cu in, 4125. polarographic, 4192. of Fe in, 1746, 3685. of Pb in, polarographic, 4192. photometric, 3184. polarographic, 3128, 3186. spectrographic, 1316. spectrophotometric, 74, 352, 1313, 3185. methyl deriv. of, i.r. spectra of, 5292. separation, from Sb, In and Te, by ion exchange, from As and Sb, paper chromatographic, 2614. from In and Sb, by ion exchange, 4173. Tin alloys, analysis of, 3618. Tiron, metal chelates of, stability of, 2031. use of, in determination of Ce, spectrophotometric, 4692 Titanium, analysis of, 2128. colour reactions of, with phenols, 3187. detection, 2124. determination, 1256, 4197. in aluminium, spectrophotometric, 3188. in basic slag, spectrophotometric, 2744. in beryllium, 934. in n-butyl titanate, 4713. in carbides, 4201. in clay, 1035. in ilmenite, spectrophotometric, 2031. in iron, polarographic, 145. in Ni - Cr alloys, 155. in niobium, polarographic, 2670. spectrographic, 2179. in niobium pentoxide, spectrographic, 2181. in Portland cement, apparatus for, 3576. in presence of Fe, in ilmenite ore, 1319. in rock salt, 5142. in rocks, 1318.

in stainless steel, spectrophotometric, 3753.

Titanium, determination-continued in steel, amperometric, 535. polarographic, 145. spectrographic, 1364. spectrophotometric, 539. in tantalic acid, spectrographic, 4745. in tantalum, polarographic, 2670. in tantalum pentoxide, spectrographic, 2181. in thorium dioxide, 335. in titanium borides, photometric, 2126. in titanium - organosilicon compounds, polarographic, 4200. in wine, spectrophotometric, 1931. in Zircaloy, spectrophotometric, 2144 in zirconium, spectrophotometric, 2144. of Al in, by ion exchange, 76. of combined N in, 2587. of Cu in, 4125. of H in, by vacuum fusion, 435. of Fe in, 436. of N in, 77, 1320. of O in, 77, 936, 1320, 3716. by vacuum fusion, 435. photometric, 75, 2031. polarographic, 1700, 3190. spectrophotometric, 1317, 2125, 3694. polarographic behaviour of, 4198. sampling of, 3693. separation, from Fe, 3254. from Nb, 2697. chromatographic, 5190. and Ta, 5215. from other elements in high-temp. alloys, by ion exchange, 2056. from Ta, chromatographic, 5190. from W, by ion exchange, 5189. Titanium alloys, analysis of Ti - Nb. X-ray fluorescence spectrometric, 335. determination of Al in, by ion exchange, 76. spectrographic, 2642. of Cr and Fe in, spectrographic, 863. of H in Ti - Mo. 15. of N in, 77. in Ti - Mo, 15. of O in, 77. in Ti - Mn, 952. in Ti - Mo, 15. of Sn and V in, spectrographic, 927. distinction from zirconium alloys, 3695. phase analysis of, 4714. Titanium borides, determination of Ti in, photo-metric, 2126. Titanium dioxide, determination, in apatite, 3189. in silicates, spectrophotometric, 935. in soil, 4525. of Cu and Sb in, polarographic, 1321. of impurities in, 5191. of Fe in, photometric, 1353. of O in, X-ray spectrographic, 2127. Titanium tetrachloride, analysis of, i.r. spectrophotometric, 5192. determination of Si and V in, spectrographic, of V in, photometric, 3209. separation, from SbCl₂, gas chromatographic. Tobacco, determination of moisture in, 1232. measuring device for, 2513. of nicotine in, spectrophotometric, 705, 1540, 4996. of particulate matter in smoke of, 2425. of peroxidase activity of, 694. smoke, detection of As and benzo[a]pyrene in, chromatographic, 4997.

Tocopherols. (See also Vitamin E.) analysis of mixtures, paper chromatographic, 279. determination, effect of water on, 1948.

in animal tissues, 4506.

effect of coenzyme Q₁₀ on, 4410. in fatty oils, polarographic, 4507.

in oils, foods and feeding-stuffs, u.v. spectrophotometric, 767.

in plasma, spectrofluorimetric, 3525. α-, determination, spectrophotometric, 3524.

Tokorogenin, determination, spectrophotometric,

Tolazoline, analytical behaviour of, 1903. Tolbutamide, determination, 2439.

in plasma, spectrophotometric, 209. in tablets, 257.

Tolidine, determination, spectrophotometric, 3822. Toluene, analysis of, gas chromatographic, 1801. determination, 3356.

of impurities in, 3362.

halogen deriv. of, photomicrography and crystallo-graphy of, 1078.

.r. data for, 1803.

nitro deriv. of, i.r. and u.v. spectra of, 3342. p-nitro-, determination, spectrophotometric, 5307. separation, from benzene and xylene, gas chromatographic, 1089.

Toluenedisulphonic acids, determination, 3345.
Toluene-3: 4-dithiol, use of, as analytical reagent,

Toluenesulphonamides, o- and p-, determination of distribution in mixtures, spectrophotometric,

8-Toluene-p-sulphonamidoquinoline, use of, in determination of Cd and Zn, 3153.

Toluenesulphonic acids, determination, 1812.

p-, determination, potentiometric, 868.

Toluic acid, determination, in presence of terephthalic acid, 3819.

separation, paper chromatographic, 4848.

Toluidine, separation, from cresol and xylene, gas chromatographic, 3329.

Toluidine blue, use of, in two-phase titrations, 3369

p-Tolylmercury acetate, separation and identifica-tion, paper chromatographic, 1971. Tomato juice, determination of Ca, Mg and K in,

flame photometric, 3506. Tomato ketchup, detection of adulteration of, paper

chromatographic, 1919.

Tomato pulp, determination of sugar in, 738. Tomatoes, determination of Ca, Mg and K in, flame

photometric, 3506.

Tonic water, determination of quinine in, fluori-metric, 1926.

Topaz, determination of Ge in, photometric, 3183. Toxicology, detection of ergometrine, paper chromatographic, 1539.

determination of metals in, paper chromatographic, 3977.

identification of metals in, 2959.

separation of alkaloids, from viscera, paper chromatographic, 1157. use of pepsin in analysis of food, 3978.

of thin-layer chromatography in, 3976. Trace elements, determination, 1639, 2590. in biological materials, 3102.

in organic matter, 3102.

in semi-conducting materials, radiochemical and mass spectrometric, 3102.

Tragacanth, analysis of, standard method for, 1911. Tranquillisers, determination, in urine, 4911.

Transaminase, determination of activity of, 2420. photometric, 4987.

Transaminase-continued

glutamic - oxalacetic, determination of activity of, in plasma and serum, 1532. fluorimetric, 696.

in serum, spectrophotometric, 5395.

glutamic - pyruvic, determination of activity of, photometric, 1533. in serum, spectrophotometric, 5395.

Transergan, determination of bases in, by ion exchange, 1167.

Triamcinolone, determination, paper chromato-graphic, 5389.

polarographic, 1169. spectrophotometric, 1169, 2908.

Tri-n-butyl phosphate, analysis of, 4090.

detection and determination of mono- and dibutyl phosphates in, 2788.

determination, in kerosine, flame photometric, 4343.

of butanol in, 2787.

solubility of, in water, effect of centrifugation on,

use of, as eluent, in paper chromatography, 4112. in separation of Cu, paper chromatographic, 4107.

of Fe, Mn, Co and Ni, paper chromatographic, 4108.

Tributylphosphine oxide, solubility of, in water, effect of centrifugation on, 4345. of temp. on, 4344.

Trichloroacetic acid, separation, from 2:4-dichloro-phenoxyacetic acid, chromatographic, 3540.

chlorofsocyanuric acid, determination of germi-cidal activity of, 1976.

1:1:1-Trichloroethane, use of, in determination of fat in feeds and meat products, 1913.

Trichloroethylene, determination, in air, automatic, apparatus for, 280. indicator tube for, 1183.

in urine, i.r. spectrophotometric, 1482. of diphenylamine used as stabiliser in, 2803.

2:4:5-Trichlorophenoxyacetic acid, butyl ester, analysis of, 5053. deriv. of, analysis of, i.r. spectrophotometric,

determination, in presence of 2:4-dichlorophenoxyacetic acid, 3540.

isopropyl ester, analysis of, 5053. Triethanolamine, separation from detergents, paper

chromatographic, 1448.

Triethylene glycol, determination, in diethylene glycol, gas chromatographic, 2764.

Triglycerides, separation, paper chromatographic,

Trigonelline, detection, 3462.

Trihydroxyfluorone, deriv. of, use of, in analysis, 418, 2119, 3694, 4189, 4242. in determination of Sb, 4221.

Tri(hydroxymethyl) methylamine, use of, as buffer, in electrophoresis, 4066. as primary standard, 1244.

Trimethylamine oxide, determination, in fish, 1174. 2:4:5-Trimethylbenzyl 2:4:5-trimethylbenzoate,

i.r. data for, 2308. Trinitrobenzene, complexes of, determination of

mol. wt. of, spectrophotometric, 187.

Trinitrophenol. (See Picric acid.)

Trinitrotoluene, analysis of cystalline structure of, 5338. colour reaction of, 1811.

Tri(iso-octyl)amine, use of, for extraction of Zn, 2083.

Tri-n-octylphosphine oxide, use of, in analysis, 3110,

Triphenylguanidine, titration of, use of photometric indicator in, 3809.

Triphosphopyridine nucleotide, separation, electrophoretic, 2316.

2:4:6-Tri-(2-pyridyl)-sym.-triazine, use of, as reagent for Fe, 2730, 4489.

Tris-(1-aziridinyl) phosphine oxide (APO), determination, in textiles, paper chromatographic, 3375.

Triterpenes, chemistry of the Liebermann - Burchard colour reaction for, 2901.

Trithion, determination of residues in crops, 4537. Tritium, analysis of mixtures of, with H, by thermal conductivity, 4655.

determination, by liquid scintillation counting, 4802, 5521.

in biol. tissues, 3859, 3860. in blood, 3859, 3860.

in hydrogen, 3129.

in milk, 5521.

in organic compounds, 564, 3129, 3783, 5262. Tritolyl phosphate, determination, chromatographic, 3824.

Tropacocaine, detection, 3462. oscillopolarographic, 1163.

Tropaeolin OO. (See Dyes, C.I. Acid Orange 5.) Tropane alkaloids. (See Solanaceous alkaloids.) Tropic acid, determination, chromatographic, 2923. Trypan red, use of, as fluorescent indicator, 6. Trypsin, determination, spectrophotometric, 3459. Tryptamine, determination, in urine, spectrofluori-metric, 3426.

Tryptophan, determination, 227, 5368.

chromatographic, 5371.

factors affecting, 1862. in presence of tyrosine and phenylalanine, polarographic, 5372.

spectrophotometric, 5370. sources of error in, 3906.

separation, from arginine, histidine and lysine, by ion exchange, 3902.

Tuberculostats, determination, review, 2942. Tubocurarine, detection, 3462. Tungsten, determination, 972, 2203, 4243.

in iron, polarographic, 145. in mixtures with Mo, by X-ray diffraction,

in molybdenum, spectrographic, 2205.

in molybdenum trioxide, spectrophotometric, 5229.

in niobium, spectrographic, 2204. in steel containing V, 540.

polarographic, 145.

simultaneously with Nb, spectrophotometric. 1335.

spectrographic, 863.

in Zircaloy-2, 971. in zirconium, 3193.

of Ca in, flame photometric, 110.

of gases in, 15, 4748.

of Na and K in, flame photometric, 110.

separation, from other metals, in a high-temp. alloy, by ion exchange, 2056.

from Ti, by ion exchange, 5189.

Tungsten alloys, analysis of W - Hf, 5196.
of W - Mo, 1728.
of W - Th, 5196.

of W - Zr, 5196.

Tungsten ores, detection of Sn in, 5187.

Tungsten oxides, determination of Ca, K and Na in, flame photometric, 110.

Tungsten trioxide, determination of Mo in, spectro-

photometric, 5229.

Turbidimetry, improvements in, 1196. Turkey red oil. (See Castor oil, sulphated.) Turpentine oil, determination of autoxidation of, by dielectric constant, 859. Tweens, determination, 2327.

Type-metal, analysis of, 1331.

determination of Sn in, spectrographic, 431. Tyrosine, determination, in presence of tryptophan and phenylalanine, polarographic, 5372. iodo- deriv. of, detection, paper chromatographic,

Ubiquinone, determination, in mitochondrial prep., spectrophotometric, 4934.

proton - resonance spectrum of, 1082.

Ulex europaeus, determination of carotene in, u.v. spectrophotometric, 782.

Umbellicomplexone, use of, as metallofluorescent indicator, 4634.

Unithiol, use of, in determination of Ca and Mg, 3148 of Zn, 4679.

Uranium, adsorption, from organic soln., by ion exchange, 3723. analysis of, 3119, 4255.

of soln. of, continuous automatic apparatus for, 5519.

of urania - thoria slurries, 335. of U - Th ore, radiometric, 1735.

radiochemical, 3726. spectrographic, 493.

determination, 16, 22, 335, 973, 1730, 1732, 2206, 2210, 2211, 3603, 3724, 4244, 5231.

absorptiometric, 2031, 2588. amperometric, 4247.

by cathode-ray polarography, 3725. by neutron activation analysis, 3103.

by X-ray fluorescence, 5237. chromatographic, 5230.

complexometric, 2031. continuous, photometer for, 4572.

fluorimetric, 2714.

in aq. sludges, by alpha activity, 4763.

in bismuth alloys, 490.

in graphite, spectrophotometric, 3229. in minerals, 3226.

simultaneously with Cu, radiochemical, 4130. spectrophotometric, 2207.

in natural water, by ion exchange, 780. radiometric, 289.

in N.B.S. iron and steel chemical standards, fluorimetric, 1371.

in phosphates, polarographic, 2209. in plants, radiometric, 289.

in presence of Be and Na, 115. of Cr. Fe and V, potentiometric, 116.

of Th, 114.

spectrophotometric, 1736.

in radioactive ores, 2031. in rocks and phosphates, polarographic, 3227. in silicate minerals, spectrographic, 488.

in soil, radiometric, 113, 289.

in soln., in presence of other elements, spectrographic, 1252.

in thorium oxide, 335. in uranium dioxide, 487.

potentiometric, 978.

in uranium oxides, polarographic, 1343.

in urine, 2588. in Zircaloy, fluorimetric, 2147.

in zircon, fluorimetric, 486. in zirconium, fluorimetric, 2147.

mass spectrometric, 3231.

Uranium, determination-continued of Al in, spectrographic, 4254. of B in, 1300. spectrophotometric, 4154. of Ca in, flame photometric, 335. of C in, 4765. of Cl in, 506. of Cu in, 4125. spectrophotometric, 1739. of F in, by ion exchange, 2715. of free acid in soln. of, by ion exchange, 3731. of gases in, 3732. of H in, 492. of impurities in, X-ray spectrofluorimetric, 984. of In in, spectrophotometric, 3671. of Mg in, flame photometric, 335. spectrophotometric, 983. of Ni in, spectrophotometric, 3234, 3730. of rare-earth metals in, 335. by ion exchange, 3233. of Na in, flame photometric, 335. of sulphate in, 2587. of 227 U in reactor fuel, 112. photometric, 4760. polarographic, 1342, 1734, 1737, 1738, 3228, 3725, 4245, 5140. square-wave, 2208. review, 135. simultaneously with Fe, spectrophotometric, 4253 spectrographic, 484, 3232, 5232. spectrophotometric, 974, 976, 1341, 1731, 1733, 2713, 3230, 4246, 4248, 4762. u.v. spectrophotometric, 4761. X-ray spectrofluorimetric, 982. extraction of, 4759. ion exchange of, continuous control of, 2031. powder, X-ray analysis of surface oxidation of, reaction of, with EDTA (disodium salt), study, 2711. separation, 491, 2712, 3727. by ion exchange, 975, 4250, 4251. chromatographic, 4249. from Al, by ion exchange, 489. from Am, Np and Pu, electrolytic, 5236. from Bi, paper chromatographic, 981. from elements forming thio salts, 3668. from other metals, photolytic, 3728. from Pa and Th, 5235. from Te, by ion exchange, 485. from Th, 4764. from Ti, by ion exchange, 4252. of \beta- and \gamma-radioactive decay products of, by solvent extraction, 5233.
of UX₁ from uranyl nitrate, by ion exchange, 499. spectrum of, between 3500 A and 5500 A, 980. titration of, with brucine as indicator, 3603. use of oxine N-oxide as reagent for, 5129. Uranium alloys, analysis of, spectrophotometric, determination of impurities in U-Mo, spectrographic, 335. of Fe in U - Mo, absorptiometric, 2587. of Mo in, spectrophotometric, 108. in U - Mo, 2587. of Nb in U - Nb, 3212. of Rh in, spectrophotometric, 1381. of Si in, spectrographic, 3180. 1116. of 235 U in U - Al, by y-counting, 979. of Zr in, photometric, 4720. of chondroitin sulphuric acid in, 4924. spectrophotometric, 5197. of cystine in, radioautographic, 3909.

Uranium carbide, X-ray analysis of surface oxidation of powder, 5238. Uranium dioxide, analysis of, spectrographic, 494. determination of Cd in, spectrographic, 1292. of Fe in, spectrographic, 1354. of Si in, 496. of U in, 487. potentiometric, 978. of V in, 497. Uranium fluorides. (See also individual compounds.) determination of Br in, spectrophotometric, 117. Uranium hexafluoride, analysis of, gas chromatographic, 3735. in mixtures with bromide fluorides, by nuclear magnetic resonance, 126. Uranium nitrides, determination of N in, 1740. Uranium ores, determination of Fe in, 1355. (See also Uranium dioxide; Uranium oxides. Uranium trioxide.) determination of Br in, spectrophotometric, 117. of Cd in, spectrographic, 5234. of impurities in triuranium octoxide, spectrographic, 495. of U in, polarographic, 1343. Uranium tetrafluoride, determination of fluorine in, by ion exchange, 2715. of H₂O and HF in, 127. polarographic, 335.

Uranium trioxide, determination of S in, spectrophotometric, 1718. of Th in, spectrophotometric, 2154. identification, by reflectivity technique, 335. Uranyl ion, determination, 111. Uranyl nitrate, determination, 3729. of alkali metals in, flame photometric, 335. of Fe in, X-ray spectrographic, 3235. of impurities in, spectrophotometric, 498. of solvation number of, 1251. separation of UX, from, by ion exchange, 499. Uranyl sulphate, determination of Fe in, 1003. of Hg, Cu and Zn in, 907. Urea, determination, 4090, 4985. apparatus for, 4407. in blood, 1486, 3387, 4921. radiochemical, 1119. spectrophotometric, 2877, 3411, 4408. in electrolytic baths, 2779. in plasma, 3387. spectrophotometric, 3411, 4408. in serum, 3387. spectrophotometric, 3411, 4408. in urea - formaldehyde resins, 2856. in urine, 1486, 2391. spectrophotometric, 3411, 4408. of biuret in, spectrophotometric, 2296. Raman spectrum of, 3064. p-Ureidophenylarsonic acid, chromatographic, 2806. separation. Urethanes, determination, 2297. Uric acid, determination, 4967. by ion exchange, 4966. in flour, paper chromatographic, 3981. in insect-infested food, 1172, 2975. in poultry excreta, spectrophotometric, 4032. in serum, spectrophotometric, 1487. in urine, 2391, 3892. spectrophotometric, 1487. Urine, detection of albumin in, indicator for, 1871. of alkaloids in, paper chromatographic, 1116. of amphetamine in, paper chromatographic, of Bence-Jones proteins in, 1869.

Urine, detection-continued of ephedrine in, paper chromatographic, 1116. of D-galactose in, paper chromatographic, 648.
of morphine in, paper chromatographic, 1116.
of organic bases in, paper chromatographic,

1116.

of phenothiazine in, 3874.

of phenylpyruvic acid in, 3881, 3882, 4924.

of protein in, 4924. of sugars in, 4924.

determination of acetazolamide in, spectrophotometric, 4913.

of acetone in, fluorimetric, 4920.

of aldosterone in, chromatographic, 2912, 2913.

of allantoin in, 2391. spectrophotometric, 2888.

of amino acids in, 1856, 3427. photometric, 3899.

of a-amino nitrogen in, 3427.

of e-aminohexanoic acid in, electrophoretic, 3433.

of androsterone in, 3455.

of anthranilic acid and deriv. in, paper chromatographic, 1506.

of Sb in, spectrophotometric, 2359.

of arginine in, by ion exchange, 3911. of azacyclonol in, spectrophotometric, 3485. of barbiturates in, 4911.

of benzene in, i.r. spectrophotometric, 1482. of Ca in, 1471, 3389, 4396, 4397.

flame photometric, 1467, 3869. of chloride in, spectrophotometric, 2360.

of Cu in, 1478.

of corticosteroids in, 1526, 3457.

of cortisol in, 1526. of cortisone in, 1526.

of creatine in, 2391. of creatinine in, 2391.

of dehydroepiandrosterone in, 2911, 3455.

of 6:8-dimercapto-octanoic acid in, spectrophotometric, 3416.

of ethanol in, i.r. spectrophotometric, 1482.

of 2-ethyl-4-thioureidopyridine in, polarographic, 642. of F- in, spectrophotometric, 1113.

of furan-2:5-dicarboxylic acid in, 4406.

chromatographic, 4412. of gentisic acid in, polarographic, 654. of glucose in, 1118, 3408.

chromatographic, 4412. spectrophotometric, 4919. f glucuronic acid in, spectrophotometric, 651. of

of glucuronides in, 3414. of glutethimide in, 4911.

spectrophotometric, 3873.

of Au in, 2867.

of griseofulvin in, spectrofluorimetric, 1483. of guanidine in, 2391.

of guanidino-acetic acid in, by ion exchange, 3911.

of guanine in, 2391.

of haemoglobin in, 214. of hexosamines in, 3423.

of 5-hydroxyindol-3-ylacetic acid in, spectrophotometric, 4922.

of hydroxylipids in, 1149. of 4-hydroxy-3-methoxymandelic acid in, 3883. electrophoretic, 652.

spectrophotometric, 1493. of hydroxyproline in, 3431.

of indican in, spectrophotometric, 4923.

of Fe in, 1478, 2361.

spectrophotometric, 2362.

Urine, determination-continued

of isoniazid in, spectrophotometric, 644, 3404. of kynurenic acid in, paper chromatographic,

of kynurenine and deriv. in, paper chromatoraphic, 1506.

of Pb in, spectrophotometric, 4402.

of lysine in, paper chromatographic, 226, of Mg in, 3863, 4397.
of malonic, methylmalonic and succinic acids in, paper chromatographic, 650. of mephenesin in, spectrophotometric, 1484.

of meprobamate in, 4911.

paper chromatographic, 727. spectrophotometric, 645, 3402.

of Hg in, 205.
of N¹-methyl-2-pyridone-5-carboxamide in, photometric, 210.

of isonicotinic acid deriv. in, spectrophotometric, 3404. of nitrite in, 4404.

of nitrofurantoin in, polarographic, 5418. of p-nitrophenol in, as a measure of exposure to parathion, spectrophotometric, 4915. of oestrogens in, chromatographic, 5388.

spectrofluorimetric, 689.

of oestradiol in, chromatographic, 5388. of oestriol in, chromatographic, 5388.

of oestrone in, chromatographic, 5388.

of oleandomycin in, 1846.

of opium alkaloids in, 4911.

of a-oxoglutaric acid in, spectrophotometric, 1491.

△4-3-oxosteroids in, spectrophotometric, of △4.

٠

of 17-oxosteroids in, 3455, 3926. paper chromatographic, 691. spectrophotometric, 1150.

of penicillin in, 4910. of pepsinogen in, 239.

of phenaglycodol in, spectrophotometric, 1845.

of phenylpyruvic acid in, 1490. spectrophotometric, 653.

of phosphate in, photometric, 2873. of K in, flame photometric, 1467.

of pregnanediol in, spectrophotometric, 3450.
20-oxopregnanediol and pregnanetriol in, spectrophotometric, 3451.

of pregnanetriol and deriv. in, spectrophotometric, 1879.

of isopropyl alcohol in, i.r. spectrophotometric, 1482.

of protein in, spectrophotometric, 229.

of pyrazinamide in, spectrophotometric, 644. of 4-pyrazinamidosalicylic acid in, spectrophotometric, 644.

of 1-pyrazinoyl-2-isonicotinoylhydrazine in, spectrophotometric, 644.

of 4-pyridoxic acid in, fluorimetric, 4409.

of pyruvic acid in, spectrophotometric, 1491. of radioactive isotopes in, 3400.

of reserpine in, 4911. of sarcosine in, 2391.

of Si in, 4187.

photometric, 3870.

of Na in, flame photometric, 1467.

of sorbitol, mannitol and glycerol in, 1485.

of steroids in, 1149.

spectrophotometric, 1879. of Sr in, 4090, 4399.

flame photometric, 3869.

of sulphate in, 640.

of S in, by liquid scintillation counting, 4906.

of Tl in, spectrophotometric, 2869.

Urine, determination-continued

of tranquillisers in. 4911.

of trichloroethylene in, i.r. spectrophotometric, 1482.

of tryptamine in, spectrofluorimetric, 3426.

of U in, 2588.

of urea in, 1486, 2391.

spectrophotometric, 3411, 4408. of uric acid in, 2391, 3892.

spectrophotometric, 1487. of V in, spectrophotometric, 4905.

of xanthine in, 2391. of xanthurenic acid in, electrophoretic, 3425.

paper chromatographic, 1506. identification of barbiturates in, paper chromato-

graphic, 1545.

of glucose in, paper chromatographic, 4924. of o-hydroxyphenylacetic acid in, paper chromatographic, 4924.

of ketosteroids in, 1151.

of kynurenine in, chromatographic, 5376.

of lactose in, paper chromatographic, 4924. of phenylalanine in, paper chromatographic,

of xanthurenic acid in, chromatographic, 5376. separation of adrenaline and noradrenaline in, paper electrophoretic, 5409.

of amino acids in, paper chromatographic, 1859. of p-aminophenol and N-acetyl-p-aminophenol

in, by ion exchange, 4459. of carbohydrates in, paper chromatographic,

647, 2368, 3878. of 17-hydroxysteroids in, chromatographic,

of △4-3-oxosteroids in, chromatographic, 2907.

Urocanic acid, determination, paper chromato-graphic, 1874. polarographic, 665.

Uronic acids, influence of amino acids on the anthrone reaction of, 2395.

Uropepsin. (See Pepsinogen.)

V-C 13 Nemacide. (See O-2: 4-Dichlorophenyl-OOdiethyl phosphorothioate.)

Vacuum regulator, automatic, 3548.

Vanadium, complexes of, with quinaldinohydroxamic acid, spectrophotometric data for, 1238. detection, 94.

determination, 16, 889, 1256, 4225, 5211, 5212,

application of "replacing absorbance co-efficients" in, spectrophotometric, 4226.

in alloys, 541.

in brine, spectrographic, 1333. in coke, spectrophotometric, 1715.

in ilmenite, spectrophotometric, 1715.

in iron, spectrophotometric, 536. in iron alloys and ores, spectrophotometric, 3208.

in iron ores, spectrophotometric, 1715. in manganese dioxide, spectrophotometric, 1715.

in mixtures with Cr. Fe and U, potentiometric, 116.

in Nb - V alloys, spectrophotometric, 21.

in petroleum coke, spectrographic, 282769. in pitch, spectrophotometric, 1715.

in plant tissue, spectrophotometric, 1475. in Portland cement, spectrophotometric, 1715. in steel, spectrographic, 863.

spectrophotometric, 142, 536, 539, 2170.

Vanadium, determination-continued

in titanium alloys, spectrographic, 927.

in titanium slag, spectrophotometric, 1715. in titanium tetrachloride, photometric, 3209.

spectrographic, 437. in tungsten steel, 1761.

in uranium dioxide, 497.

in urine, spectrophotometric, 4905.

in wine, 2469.

of Mg in, spectrographic, 2588.

of O in, spectrographic, 5214.

of P in, 1334. photometric, 2694.

spectrophotometric, 95, 867, 2031, 2168, 2695, 3207, 3711, 4224.

with spectrophotometric end-point detection, 460.

Vanadium alloys, determination of V, in V - Fe, 461. in V - Nb, spectrophotometric, 2169.

Vanadium oxides, determination, in glass, 5212 Vanadium sulphate, use of, in volumetric analysis, with Safranine T as indicator, 2601.

Vanilla, detection of non-carbonyl volatiles of, gas chromatographic, 1920.

extracts of, analysis of, 4478. chromatographic evaluation of, 1921. isolation of resins from, 1177.

paper chromatography of, 3507. Vanillin, determination, 1566. oscillopolarographic, 3989.

Vapour pressure, determination, simple method for, 5072.

Variamine blue. (See Dyes, C.I. Azoic Diazo Component 35.)

Vasicine, determination, in Adhatoda vasica, 247. Vasopressin, determination, paper chromatographic, 3479.

Veratrum alkaloids, determination, of esters of, spectrophotometric, 4452. Vetiver oil, Indian, determination of carbonyl

content of, 196.
Victoria violet. (See Dyes, C.I. Acid Violet 3.)
Vinegar, determination of amino acids in, 5024.

spirit, detection of amino acids in, paper chromatographic, 5433.

Vinyl acetate, determination, 1834. Vinyl chloride, determination of traces of aldehyde

Vinyl cyanide, determination, 2031, 2295.

in copolymers with vinylpyridine, 623.

in elastomeric polymers, 2340.
polarographic, 2339.

Vinyl emulsions, determination of surface-active agents in, 2838.

Vinyl esters, analysis of, mass spectrometric, 2772. Vinyl ethers, analysis of, mass spectrometric, 2772. determination, 1784.

of water in, by the Karl Fischer method, 2766.

5-Vinyl-2-oxazolidinethione, determination, in milk and plants, spectrophotometric, 1875.

Vinylpyridine, determination, in elastomeric polymers, 2340.

7inyl-2-thio-oxazolidone. (See 5-Vinyl-2-oxazolidinethione.)

Vioform. (See 5-Chloro-8-hydroxy-7-iodoquinoline.) Viomycin, determination, 3476.

Viscometer, direct-reading, 1988.

for measurements at pressures up to 25,000 p.s.i. at 0° to 500° F, 1601.

with negligible kinetic energy correction, 5071. Viscose, determination of S in, polarographic, 4885. spinning liquor, determination of Mg and Zn in, Viscose rayon, analysis of mixtures with cotton, 1831.

detection of damage in, 2847. determination of cotton in, 3376.

Vitamin A, determination, 3002, 3522, 3524, 5454. chromatographic, 1581.

in beverages, spectrophotometric, 3994. in feeding-stuffs, spectrophotometric, 757.

in margarine, spectrophotometric, 4497. of the biol. potency of, from maleic values, 4496. spectrophotometric, 3001.

identification, i.r. spectrophotometric, 756. tamin B₁. (See Thiamine.)

Vitamin B₁. Vitamin B. (See Riboflavine.)

Vitamin B₄. (See Pyridoxine.) Vitamin B₁₂. (See also Cobalamin.) determination, 1892, 3526, 3886.

i. blood, 3885.

in pharmaceutical preparations, 3960.

in the presence of intrinsic factor, spectrophotometric, 3959. microbiological, 4505.

separation, chromatographic, 5463.

Vitamin B group, detection, microbiological, review, 5457, 5458.

determination, of members of, review, 2488. i.r. spectrophotometric, 756.

Vitamin D. (See also Calciferol; Cholecalciferol; Ergocalciferol.)

determination, 2031. chemical, 1944.

microbiological, 5455.

in multivitamin mixtures, 1582. progress in, 5456.

spectrophotometric, 758, 1944.

Vitamin E. (See also Tocopherols.) determination, in food, 5469.

of purity of substances used for synthesis of i.r. spectrophotometric, 2489.

Vitamin K₁, proton - resonance spectrum of, 1082. Vitamin K2, determination, in Portuguese sardines,

proton - resonance spectrum of, 1082.

Vitamins, assay of, microbiological, 3000, 3102, 5126. review, 699.

problems connected with, 5453.

Volatile oils, analysis of, 4876.

gas chromatographic, 2329, 3461. Volumetric analysis, acid - base, calculation of errors in, 4636.

non-aq., 3.

theory of titration of bases in, 2047.

review, 8. use of benzanthrone as internal indicator for, 1651.

use of PbO₂ electrodes in, 1223.

of nitron in, as extraction indicator, 1647, 2046.

argentimetric, use of Erio green B in, 1648. of fluorescein deriv. in, 5130.

of pyromellitein indicators in, 4632. of resorcinolphenylsuccinein in, 5130.

attainable precision in, 7.

automatic, apparatus for, 3028. calculation of asymmetric titration curves avoiding the use of cubic equations, 4100.

calibration of glassware in, tables for, B.S.I. amendment to, 4546.

determination of u.v.-absorbing substances by,

heterometric, review, 3102.

iodimetric, indicator for, 1241. principles of, 2031.

magnetometric, technique for, 342.

Volumetric analysis-continued

micro, apparatus for, 5066.

multi-function automatic recording photometric titrator for, 4088.

non-aq., applications of, 3606, 4637.

evaluation of sulphonic acids as titrants in, 2784.

use of mercuric acetate as reagent in, 1246. of sulphamic acid as primary standard in,

2044. of visual titrations in, 1247.

preparation of stable sulphatoceric acid for, 2045. recording spectrophotometric titrimeter for, 2031. redox, recent advances in, review, 1637.

review of unusual reagents in, 1235. use of Variamine blue in, 1649.

reductimetric, use of vanadium sulphate in, with Safranine T as indicator, 2601.

standardisation of NaOH soln. for, 4099.

technique for high-precision, 796.

thermo-, of fused salts, automatic, 1629. use of, in determination of traces of free acid, 1650.

turbidimetric, technique of, 1196.

use of discriminants in calculations, 3598. of non-log. curves for determination of end-point and dissociation constant, 3605.

of potassium ferricyanide as oxidant in, 3607. of "three-phase titration" in, 3117.

Volumetric analysis, amperometric, advantages of two indicator electrodes in, 4619, 5518.

dead-stop end-point detector for, 1224. determination of end-point in, simple circuit for, 1981.

developments in, review, 3584, 5125.

use of mercury and copper as indicator electrodes in, 4610.

of a rotated Al-wire electrode in, 1635.

of solid electrodes in, recent developments in, 3102.

of the R.Al.E. as indicator electrode in, 2021. with "dead-stop" end-point, 324. without applied e.m.f., 329.

Volumetric analysis, chronopotentiometric, apparatus for, 3090.

derivative-, technique for, 325.

simultaneous analysis of multiple constituents by, 842.

Volumetric analysis, complexometric, automatic apparatus for, 2014.

detection of end-point in, with polarised mercury electrodes, 326.

elimination of blocking caused by indicators in, 2603.

masking by acetylacetone in, 5135. new reagents for, 3102.

of highly coloured ions, review, 2604. present state of, in Czechoslovakia, 3102.

recent advances in, 2031. review, 3107.

use of CHEL-242 as complexing agent in, 3102. of external redox pair in, 856. of methylthymol blue as indicator in, 3102.

Volumetric analysis, conductimetric, high-frequency,

apparatus for, 3092, 4613. applications, 2022.

limits of concn. measurement by, 4615. method for, 3610.

use of crystal-controlled oscillator in, 4617. of unbalanced bridge circuit in, 4614.

Volumetric analysis, coulometric, apparatus for, 3000

at constant potential, review, 4616.

Volumetric analysis, coulometric—continued automatic, continuous, 4618. direct-reading current integrator for, 3095. end-point location in, 1225. fundamental developments in, review, 5125. in anhydrous media, 3585. ion-exchange membranes for use in, 3094. titration of acids and bases by, 2583. use of, in ultra-micro analysis, 843, 3102. of semi-conductor devices in, 3103. of working electrode of predetermined potential

in, 2024 Volumetric analysis, potentiometric, apparatus for,

3090. application of constant current in, 3091.

automatic recording velocity-servo mechanism for, 4611.

determination of end-point in, precision of, 323. fundamental developments in, review, 5125. methods and apparatus for, 1599.

parallel titrations by, use of two indicator electrodes in, 3586.

recording automatic titrator for, 2020. review of techniques of, 4600.

titration of oxidising and reducing agents by, review, 2613.

use of a.c. in, 3587. of Al electrode in, 1634.

of electrodes screened by polymers in, 4612.

of a high-frequency titration apparatus in, 2023. of mercury and copper as indicator electrodes in, 4610.

of rotated Al-wire electrode in, 1635. of semi-conductor devices to, 3103.

of solid electrodes in, recent developments in, 3102.

of the R.Al.E. as indicator electrode in, 2021. Volumetric analysis, thermometric, fundamental developments in, review, 5125.

W

Wackenroder reaction, study of, with radiometric paper-chromatographic methods, 467.

Water. (See also Karl Fischer reagent; Moisture.) CO₃-free, washbottle for, 1190. de-ionised, determination of silica in, by ion

exchange, 2662. determination, apparatus for, 4116.

automatic, 3583.

continuous, in fluids, coulometric, automatic,

in acetic acid, spectrophotometric, 2774.

in air, by galvanic micro-piles, 2610. in alcohols, "hygrophotographic", 4657.

in biol. fluids, by liquid scintillation spectrometry, 5339.

in carbonate minerals, 163. in chloral hydrate, 1661. in a drained solid, 2031.

in drugs, gas chromatographic, 1155.

in esters and ethers, photometric, 3311. in ethyl acetate, 1661.

in gas streams, 5144. in halogenated hydrocarbon oil, 2821.

in hydrocarbons, 2820. in inert gases, 3130.

in ketones, photometric, 3311. in leaves, "hygrophotographic", 4657.

in magnesium fluoride, 127. in organic liquids, 3283.

in plastics, "hygrophotographic", 4657. in polymers, amperometric, 3130.

Water, determination—continued in pyridine bases, 2816. in serum, 3857, 4394.

in silicates, 163.

in slag, 4294. in soil, "hygrophotographic", 4657.

in substances that react with Karl Fischer reagent, 3844.

in tobacco, 1232.

in uranium tetrafluoride, 127.

in vinyl ether deriv., by the Karl Fischer method, 2766.

of total, in the body, 2354.

titrimeter for, 3093.

with Karl Fischer reagent, spectrophotometric detection of end-point in, 3621.

pressurised, chemical control of test loops and autoclaves, 335. reactor-coolant, analysis of dissolved gases in, 335.

removal of, from Karl Fischer reagent, 1237. stored in polyethylene bottles, u.v. absorption spectrum of, 4654.

Water, boiler, determination of dissolved O in, apparatus for, 1955. coulometric, 1959.

of salt content of, conductimetric, 284.

Water, natural, analysis of, by ion exchange, 5473. use of glass electrode with sodium function for, 4514.

bacterial analysis of, by membrane-filter technique, 774.

concn. of Nb from, 463.

detection of pesticides in, i.r. spectrophotometric, 2497.

of sugar in, spectrophotometric, 3534.

determination of alkylbenzenesulphonates in, spectrophotometric, 1957. of benzene in, spectrophotometric, 781.

of B.O.D. of, apparatus for, 1191.

of B in, 2496.

of Br in, 1187, 1954 spectrographic, 1186.

spectrophotometric, 2494. of Cd, Cu, Ni, Pb and Zn in, by cementation with magnesium, 864.

of Cs and Sr in, by electrodialysis, 1956. of Ca in, 4024, 5475.

spectrophotometric, 4023.

of CO, in, 5477. of carbonate alkalinity of, 4515.

of Cl- in, 1954. indicator for, 282, 1953. spectrographic, 1186.

of ClO₂ in, spectrophotometric, 3006. of Cu in, 4517.

by ion exchange, 1698.

paper chromatographic, 886. of cyanide in, polarographic, 4027.

of dissolved O in, 3529, 3530, 3531, 4021. automatic, 4022.

continuous, apparatus for, 2584.
of F- in, 3397.
by ion exchange, 4025.
in presence of Cl-, 1588.

spectrophotometric, 2031. of fission products in, 3102.

of free CO, in, 775. of fulvic acids in, u.v. spectrophotometric,

of gases in, gas chromatographic, 4513. of I in, spectrographic, 1186.

spectrophotometric, 4026.

of Fe in, 1586.

of Pb in, by ion exchange, 1698.

Water, natural, determination-continued

of Mg in, 4024, 5475.
of Hg in, polarographic, 1589.
of Ni in, paper chromatographic, 886.
of nitrates in, 2492, 5041.

spectrophotometric, 777, 4517.

of nitrite in, spectrophotometric, 1958.

of oil in, 4519.

of organic matter in, 3007.

of permanganate value of, 3532.

of phosphate in, 778. of K and Na in, flame photometric, 5474.

of Ra in, 5476.

of silica in, spectrophotometric, 1695. of **Sr and **Sr in, radiochemical, 1677, 5042.

of sulphate in, 3216.

of sulphide in, spectrophotomettic, 2495.

of total hardness in, 1952.

of trace elements in, by neutron activation analysis, 1587.

of Pu in, radiometric, 289.

of radioactive elements in, 283.

of radioactivity of, 779.

of Si in, spectrophotometric, 776. of S in, spectrographic, 1186.

of Th and U in, by ion exchange, 780.

of U in, radiometric, 289.

Water, sea, determination of Al and Fe in, simultaneously, spectrophotometric, 2498.

of Ba in, spectrometric, 4677.

of I in, 4518.

of permanganate value of, 3532. of K in, 1263.

of radioactivity of, 4028.

Wattle-bark, determination of catechins in, paper chromatographic, 3854.

Waxes, analysis of, by ion exchange, 4392.

mass spectrometric, 2029. hydrocarbon, determination of S in, spectrophotometric, 3840.

plant, analysis of, chromatographic and by X-ray diffraction, 1853.

Weighing, adjustment of weights on weight-in-air basis, 2509.

design of weight burettes, 294.

errors in, 3102.

technique of reduction of, 1640.

of volatile liquids, 4542.

on microscale, reliability of, 3102.

sampling of moisture- or oxygen-sensitive compounds, 4093.

vessels for, B.S.I. specification for, 4039. Weisz ring oven, recent developments in use of, 3102

use of, in analysis, 153. Wheat. (See also Flour.)

determination of Mn in, polarographic, 4521. of moisture in, 3979.

of Zn in, polarographic, 4521.

identification of a-emitting radioactive isotopes in, spectrometric, 1479.

Matveef test, application of, 731.

separation of proteins of, paper chromatographic, 2450.

Whey, condensed, determination of lactose in, i.r. spectrophotometric, 265.

determination of lactose in, spectrophotometric, 2457.

proteins, determination of N in, 268.

separation, electrophoretic, effect of mastitis on pattern of, 269.

Wine, analysis of, paper chromatographic, 4002. detection of esters of p-hydroxybenzoic acid in, 1924.

Wine continued

determination of bromoacetic acid in, chromatographic, 2990.

of Ca in, 748.

of CO₂ in, 2989. of Co in, 2470.

of diglycosides in, u.v. spectrophotometric, 5442

of ethanol in, 1573.

of F in, 749.

of formic acid in, 2471.

of glycerol in, paper chromatographic, 4488. of Fe in, spectrophotometric, 1931.

of Pb in, 1932.

polarographic, 4005. of K in, flame photometric, 1930, 4003. of Na in, flame photometric, 1930, 4003.

of Ti in, spectrophotometric, 1931.

of V in, 2469.

of volatile acids in, 4004.

distinction between naturally pure and sweetened,

identification of genuine, use of the Rebelein index for, 5441.

Wolframite, determination of trace elements in, spectrographic, 1039.

Wollastonite, pseudo-, analysis of, spectrographic, 2663.

Wood, detection of preservatives in, 1833.

determination of As in, 4030.

of Cl in, 3373.

of moisture in, 870.

of sugars in, paper chromatographic, 5354. Wool, destruction of, with periodic acid, 5139.

determination, in felt, 5323.

of basic groups in, by dye uptake measurements, 4884. of S in. 2336.

felt, determination of cellulose and casein fibres in, 5323.

solvent extracts from, determination of nonionic surface active agents in, 4872. wet oxidation of, 1396.

Xanthates, determination, 2786.

in cellulose, 2846.

Xanthine, determination, in urine, 2391.

Xanthine oxidase, determination of activity of, 2916. Xanthocomplexone, use of, as metallofluorescent indicator, 4634.

Xanthone, determination, in 9:2'-piperidinoethyl-xanthen, spectrophotometric, 1884.

Xanthophyll, detection of added, in alimentary pastes, chromatographic, 2449.

Xanthurenic acid, determination, in biol. fluids, chromatographic, 1506.

in urine, chromatographic, 3907. electrophoretic, 3425.

identification, in urine, chromatographic, 5376.

X-ray diffraction analysis, conversion of printed patterns into photographs, 3056. identification of crystalline phases by, 12. improved eyepiece graticule for, 5499. of highly radioactive samples, 3103.

rapid-scanning apparatus for, 4072.

use of, in study of equilibrium systems, 2544. of monitored Geiger-counter with automatic recording in, 824.

of scintillation counters in single crystal-, 2543. X-ray fluorescence spectrometry. (See Spectrography, emission, X-ray.)

X-ray spectrography. (See Spectrography, emission, Zinc, determination-continued

Xylene, analysis of, 3814.

gas chromatographic, 1801.

determination, in air, 4511.

separation, chromatographic, 3813, 4350.

from benzene and toluene, gas chromatographic,

from cresol and toluidine, gas chromatographic, 3329

Xylene cyanole FF. (See Dyes, C.I. Acid Blue 147.) Xylenol orange, use of, as indicator, in determination

of Hf, spectrophotometric, 2677. of Fe, spectrophotometric, 3746. of Zr, spectrophotometric, 1324.

Kylidyl blue II, use of, in determination of Mg, 34. Xylonic acid, separation, by ion exchange, 3317. Xylose, determination, 4331.

identification, paper chromatographic, 2272. separation from other sugars, in urine, paper chromatographic, 647. paper chromatographic, 3308.

Yeast, determination of thiamine in, 1181. Yoghourt, determination of fat in, 263, 3504. Yohimbine, separation, from other drugs, by ion

exchange, 3965. determination, oscillopolarographic, Ytterbium,

3178. Yttrium, analysis of, 2109, 2128.

concentration of other rare-earth elements in, by extraction of the thiocyanates, 1310.

determination, 2651.

flame spectrophotometric, 5182. spectrophotometric, 4178.

extraction of, 4142.

polarography of, 917. separation of *6Y from other radio-isotopes, 3620. from Sc, Ac and the lanthanides, paper chromatographic, 4176.

from Sr, electrolytic, 1692.

from Sr, Ce, La and Pr, by focusing ion exchange, 4115. from Zr, paper chromatographic, 4177.

of Cu, Fe, Mo and Ni in, 2109. Yttrium oxide, analysis of, 2128.

Zine, analysis of, spectrographic, 45.

mass spectrometric, 3648. detection, in internal organs, paper chromato-

graphic, 3977. determination, 862, 1657, 1678, 3151, 31 3153, 3649, 4144, 4145, 4650, 4679, 4710.

by cementation with magnesium, 864. by electrolysis, potentiostat for, 5122.

chromatographic, 4146. coulometric, 4680

in aluminium alloys, X-ray spectrographic, 4681.

in biol. materials, 3646, 3647.

in brass, 905.

spectrophotometric, 1270.

in bronze, 905.

spectrophotometric, 1270.

in cadmium, polarographic, 1289, 4148.

in copper alloys, electrolytic, 3616.

in copper matte, polarographic, 931. in feeding-stuffs, 4527.

in ferrites, 525.

in indium, 4172.

in iron alloys, spectrographic, 4270.

in iron ores, in presence of Co and Ni, polarographic, 47.

in lithopone, 3384.

in magnesium alloys, 3619.

in metallurgical materials, by atomic absorp-

tion spectroscopy, 6514. in nickel, spectrographic, 2239. spectrophotometric, 3270.

in ointments, radiometric, 2958. in ores, by ion exchange, 1680. in plants, oscillopolarographic, 5352.

in plasma, spectrographic, 1108.

in presence of Cu, complexometric, 884. of Fe, polarographic, 1655. of Ni, 2055.

in silicon, spectrographic, 924.

in soil, 4400. chromatographic, 286.

in solder, 1682.

in sulphide ores, simultaneously with Pb. polarographic, 434.

in thallium, 4172. spectrographic, 2057.

in viscose spinning liquor, 3377. in wheat, polarographic, 4521.

in zinc oxide, polarographic, 1255.

of Sb in, photometric, 4220. of Cd in, by neutron activation analysis, 3102

of Cu in, 3134, 4125.

of H in, spectrographic, 2615.

of impurities in, 1683. paper chromatographic, 4682.

of Fe in, 1746.

of Pb in, 4195.

polarographic, 1286. of Sn in, photometric, 71. of Tl in, polarographic, 1286.

of ZnO in, 97.

oscillopolarographic, 1681. paper chromatographic, 399.

photometric, 4147. polarographic, 379, 907.

pulse polarographic, 3617. radiochemical, 9, 885, 3650. spectrophotometric, 46, 901, 902.

extraction of, with isobutyl methyl ketone, 4109. with tri(iso-octyl)amine, and determination,

2083. metallic, determination, influence of metallic

lead on, 903. separation, from alkaline-earth metals, electrolytic, 861.

from Cd and In, by ion exchange, 3167.

from Cu and Cd. 1254.

from Ni, in electroplating solutions, 904. from Tl, In and Cd, electrolytic, 1658.

from other elements, 1679.

of Cd from, in nitrate-citrate buffer soln., electrolytic, 1291.

Zinc acetate, determination of Pb in, polarographic,

use of, in separation of iodide, 4629. of Re, 4629.

Zinc alloys, analysis of, 1657.

determination of Sb in, photometric, 4220. of Cu in, 4126.

of Sn in, photometric, 71.

Zinc diethyldithiocarbamate, determination, spectrophotometric, 2350.

Zinc dust, determination of reducing power of, Zirconium, determination-continued 5163

Zinc ethylenebisdithiocarbamate. (See Zineb.) 8-hydroxyquinolinate, spectrophotometric stability of, on filter-paper, 4647.

Zinc ores, analysis of soln. derived from, spectrographic, 2248.

determination of Ge in, 4189.

Zinc oxide, determination, 1557.

in lithopone, 3384. in zinc, 97.

of zinc in, polarographic, 1255.

Zinc peroxide, determination, in cosmetics, 1825. Zinc salts, determination of impurities in, paper chromatographic, 4682.

Zinc sulphide, determination, in the binder films of television screens, spectrographic, 2636. of Cl and Ag in, radiochemical, 2031.

Zineb, determination of residues of, spectrophotometric, 2507.

Zircaloy, analysis of, by X-ray fluorescent method, 2134.

spectrographic, 2136, 2137, 2139, 2146. determination of Al in, fluorimetric, 939. and Cu in, spectrographic, 2140. of Cr in, 4208.

of H in, 937. of Ni in, 940.

of O in, 2145. of Sn in, 925. polarographic, 926.

of Ti in, spectrophotometric, 2144.

of W in, 971.

of U in, fluorimetric, 2147.

Zircon, determination of Th in, photometric, 3197.
of U in, fluorimetric, 486.

Zirconium, analysis of, 2138. by production control quantometer, 2675. spectrographic, 1702, 2136, 2137.

analytical chemistry of, review, 4202. determination, 340, 438, 1322, 1323, 1324, 2148, 2151, 2671, 2672, 2682, 3696, 4203, 4204, 4653, 4715, 4716, 5193, 5194, 5201, 5202, 5203

flame photometric, 11.

in alloys, 4721.

in niobium, spectrographic, 2179.

in paint driers, 1325.

in phosphorites, spectrophotometric, 440. in presence of Nb and Ta, 2133.

of U, 335.

in "red mud", 4719.

in rocks and quartz sand, 1701.

in thorium oxide, 335.

in uranium alloys, photometric, 4720. spectrophotometric, 335, 5197.

in zirconium diboride, 5195. of Al in, fluorimetric, 939.

and Cu in, spectrographic, 2140.

of B in, spectrophotometric, 4154. of C in, 2141.

of Cr in, 4208.

of combined N in, 2587.

of Cu in, 4125. of gases in, 3732.

of Hf in, by isotope dilution, 2678. by neutron activation analysis, 442. spectrographic, 4209.

of H in. 937. spectrographic, 2615.

of Pb in, polarographic, 4207, 5188. of Mo and W in, 3193.

of Ni in, 940.

of Nb in, spectrophotometric, 1716. of N in, spectrophotometric, 938.

of O in, 441, 2145.

of rare-earth metals in, spectrographic, 3194.

of Si in, photometric, 2142.

of Ta in, spectrophotometric, 2180.

of Sn in, polarographic, 5188.

of Ti in, spectrophotometric, 2144.

of U in, fluorimetric, 2147.

photometric, 2031.

polarographic, 1737, 2130, 3191, 4205. spectrographic, 439, 2132, 2139.

spectrophotometric, 2131, 2135, 2673, 2674, 4718.

together with Nb, by ion exchange, 4722. use of cadmium polarogram in, 4206.

reagent for, 2129.

separation, by ion exchange, 3192. from As, Sb, Te and Hg, 900.

from Nb, chromatographic, 4746.

from Y, paper chromatographic, 4177. of Hf from, by ion exchange, 443.

of Th from, by ion exchange, 943. study of co-precipitation of, with Ce, 2676. of reaction of, with methylthymol blue, spectrophotometric, 4717.

Zirconium alloys, analysis of Zr - Fe, 528. of Zr - W, 5196.

determination of C in, 2141.

of Pb in, polarographic, 4207, 5188.

of N in, spectrophotometric, 938.

of rare-earth metals in, spectrographic, 3194. of Ta in, spectrophotometric, 1716.

of Sn in, polarographic, 5188. distinction of, from titanium alloys, 3695.

Zirconium diboride, determination of B in, 5195. of C in, 5195.

of Zr in, 5195.

Zirconium dioxide, determination of HfO₃ in, spectrographic, 444.

Zirconium hydride, determination of B in, 2087. Zirconium oxide, determination of O in, 3716.

Zone melting, application to analysis, review, 3108.

LIST OF PATENTS ABSTRACTED

BRITISH PATENTS

Patent No.	Abstr. No.						
807,437	1983	821,849	829	826,174	2015	831,804	3408
816,023	801	822,432	1609	826,278	2027	841,548	5472
816.815	798	823,359	2523	827,018	2059	843,028	5186
817,474	2014	823,425	2003	827,708	2513	843,221	5353
818.703	1996	824,266	1599	828,121	2515	843,936	5470
818,732	1955	824,297	1984	828,151	2514	844,424	5495
818.845	2331	824.854	1982	829,040	3056	844,905	5485
821.013	799	825,508	2000	830,930	3577	846,171	5510
821.821	797	826,066	1871	831.039	3545		

USSR PATENTS

Patent No. Abstr. No.		Patent No.	Abstr. No.	Patent No.	Abstr. No.	Patent No.	Abstr. No.		
117,662	2067	120,029	3153	121,970	5075	124,197	4821		
117,678	2046	120,677	4784	122,336	4869	125,920	5108		
118,224	2256	120,925	4714	123,341	4742	125,940	5315		
118,652	2303	121,264	5098	123,752	4767	126,295	5149		
119,376	3027	121,282	4710	123,949	4775	126,656	5473		
119,709	3169	121,963	4891	124,194	4672	126,875	5258		

ABBREVIATIONS

Certain abbreviations in everyday use are not included in the following list. When any doubt might arise from the use of an abbreviation or symbol the word is printed in full.

alternating current		. a.c.	milli-equivalent	milli-equiv.
ampere		. amp.	milligram	mg
Angström unit .		. A	millilitre	ml
anhydrous		. anhyd.	millimetre	mm
approximate, -ly		. approx.	millimicrogram	mμg
aqueous		. aq.	millimolar	mM
atmospher-e, -ic .		. atm.	millivolt	mV
boiling-point .		, b.p.	minute (time)	min.
British thermal unit		B.Th.U.	molar (concentration) .	M
calorie (large) .		. kg-cal.	molecul-e, -ar	mol.
calorie (small) .		. g-cal.	normal (concentration) .	N
centimetre		. cm	optical rotation	α_k^t
coefficient		. coeff.	ounce	
Colour Index .		. C.I.		OZ
concentrated .		. conc.		p.p.m.
concentration .	•	. concn.	per cent	%
constant	•	. const.	per cent. (vol. in vol.)	% (v/v)
crystalline)	per cent. (wt. in vol.)	% (w/v)
		cryst.	per cent. (wt. in wt.)	% (w/w)
crystallised .		cu.	potential difference	p.d.
		. cu.	precipitate (as a noun) .	ppt.
current density .			precipitated	pptd.
cycles per second		. c/s	precipitating	pptg.
density		. ρ	precipitation	pptn.
density, relative .		. d or wt. per ml	preparation	prep.
dilute		. dil.	qualitative, -ly	qual.
direct current .	*	. d.c.	quantitative, -ly	quant.
distilled	*	. dist.	recrystallised	recryst.
electromotive force		. e.m.f.	refractive index	ni
equivalent		. equiv.	-1-4i b 1 1	R
ethylenediaminetetra-	acetic		relative band speed relative humidity	r.h.
acid	*	. EDTA		
gram		. g	saponification value	r.p.m.
gram-molecule .		. mole		sap. val.
half-wave potential		. E:	saturated calomel electrode	S.C.E.
hour		. hr.	second (time)	sec.
hydrogen ion exponen	it	. pH	soluble	sol.
infra-red		. i.r.	solution	soln.
insoluble		. insol.	specific gravity	sp. gr.
international unit		. i.u.	specific rotation	$[\alpha]_{\lambda}^{i}$
kilogram		. kg	square centimetre	sq. cm
kilovolt		, kV	standard temp, and pressure	s.t.p.
kilowatt		. kW	temperature	temp.
liquid		. liq.	ultra-violet	u.v.
maxim-um, -a		. max.	vapour density	v.d.
melting-point .		. m.p.	vapour pressure	v.u.
microgram .		. μg (not γ)		v.p.
microgram		. μg (not γ)		vol.
			volume	W
micromole		. μmole		
micron		. µ		λ
milliampere .		. mA	weight	wt.

In addition, the following symbols may be used in conjunction with numerical values or in mathematical expressions—

greater than .		>	less than .				<
not greater than		*	not less than				*
is proportional to		œ	of the order of.	appi	roxima	telv	~

The principal Pharmacopoeias are denoted by B.P., U.S.P. or D.A.B., together with the identifying roman numeral or year.

Valency states are represented by a superscript roman numeral, e.g., Fe^{II}, Mo^V. Substances in the ionic state are represented by Na⁺, Fe²⁺, Fe³⁺, etc., for cations and by Cl⁻, SO₄³⁻, PO₄³⁻, etc., for anions.

